Hygeia

THE HEALTH MAGAZINE

AUGUST

1947 25c

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Head Lice

Question:—Please tell me whether the new DDT powder is a satisfactory preparation for eradication of head lice. Is it apt to be dangerous? What precautions should be used in treating children?

Answer:—According to information published recently in the *Journal of the American Medical Association* DDT powder, a mixture of DDT with an inert diluent such as talc, is highly effective against head lice. One thorough application of a powder containing 10 per cent of DDT will completely eradicate an infestation. A powder containing as low as 0.25 per cent of DDT is effective but for only a short time. It is suggested that the amount of DDT in the preparation used be at least 5 per cent.

Since DDT will not kill or remove the eggs, the powder should be allowed to remain in the hair for approximately ten days so that it will kill the hatching nymphs and also protect against reinfestation from other sources during and after the delousing period. Live lice that are often scattered about the home may serve as a source of reinfestation. Although DDT powder does not appear to be harmful to man, the eyes of the patient being treated should be covered.

Solutions or emulsions containing 1 to 2 per cent of DDT also have given excellent results against head lice but should be used with caution since they are more dangerous to man than the powder; however, solutions have been used extensively by the military services without any injuries. Directions for use are the same as those mentioned for the DDT powder. One application should be sufficient if the material is not removed from the hair.

It is of course necessary that the child or children be protected against exposure to the original source of the lice. Such precautions are required as routine procedures in some schools or other institutions where large numbers of children are present.

Big Brother

Kristi Karol and Hans Olson

Ever since Hans went with Daddy down to the hospital to get baby sister, he has been taught that he must help shield her from harm. He knows just how high she can safely go in the swing. He wraps his protecting arms around her when other children tease her. It is hard for him not to be annoyed with the way she scribbles when coloring, but she is learning under his guiding hand.

He will take her to and from school when the time comes, and see that she does not run out in the street when there are cars coming.

Mrs. HARLAND OLSON.

Mauston, Wis.

The mother submitting the outstanding child training suggestion will have this suggestion and the child's picture published on this page of HYGEIA. Material not accepted will be returned.—Ed.

Bad Habits

Question:—How can I cure my 6 year old daughter of nail biting and picking her nose? Bitter substances on the nails do no good. I practically cured her of this when she was 4, but she had scarlet fever and measles and started all over again. Often she denies biting her nails or picking her nose right after I have seen her do it. Sometimes I believe she does not realize she is doing it. Will she outgrow it?

Answer:—Using unpleasant tasting substances on the nails is not often successful. Correction of such practices is not always easy. Frequently slight nervous instability, induced perhaps by a feeling of insecurity or minor family tensions, is the basis of the undesirable habit. You can have your daughter examined by your physician to eliminate any possible nervous disorder and also to determine if she is in satisfactory physical condition. Such a checkup is especially valuable after any serious illness.

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Hygeia
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ELLWOOD DOUGLASS, Managing Editor — W. W. BAUER, M.D., Interim Editor
CHARLES TURZAK, Art Director — FRANK V. CARGILL, Director of Circulation

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WHO'S WHO in Hygeia

A BUSY MAN

ROBERT H. KENNEDY, M.D., is surgical director of the Beekman-Downtown Hospital and attending surgeon in charge of the tumor division of the New York Post-Graduate Hospital in New York.

He is clinical professor of surgery at the New York University College of Medicine and author of fifty articles in professional journals as well as contributor of chapters in Christopher's Textbook of Surgery, Scudder's Treatment of Fractures and Bancroft's Operative Surgery.

DENTIST IN RESEARCH

ROBERT G. KESEL, D.D.S., who wrote "Sweet Tooth Versus Sound Teeth," is widely known among dentists for his research and professional writings.

In 1946 his paper, "The Biological Production and Therapeutic Use of Ammonia in the Oral Cavity in Relation to Dental Caries Prevention," received the annual award of the Chicago Dental Society. It was published in the June 1, 1946, issue of the *Journal of the American Dental Association.* Dr. Kesel was editor of the *Fortnightly Review* of the Chicago Dental Society from 1941 through 1946.

He is head of the Department of Applied Materia Medica and Therapeutics and director of the dental clinics at the University of Illinois. He is President-Elect of Illinois State Dental Society, to serve as President in 1948.

SHORT AND TO THE POINT

Very simply LESTER HOLLANDER, M.D., stated of himself, "Lester Hollander is a practicing dermatologist whose interest includes in addition to his office practice and the management of an outpatient department the care and supervision of a daughter and two grandchildren."

NOW THAT IT'S SUMMER

Originally a New Yorker, LOUISE PRICE BELL learned of safe swimming at Atlantic beaches. There, also, she learned the method of gradually acquiring a "golden-brown toasty look"—a method she still practices in other surroundings, for, she says, her

(*Continued on page* 580)

Faith **well placed**

A lifeguard has a job as important as his name implies. The faith placed in him is justified by his alertness and by the thorough training necessary in his work. Far more thorough, however, is the training required for a Walgreen Pharmacist who must always compound *every* prescription with the greatest of precision and care. You will find your *faith well placed* when you bring your prescription to your Walgreen Drug Store.

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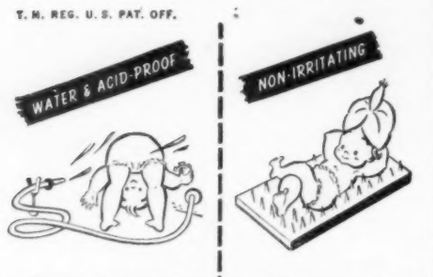

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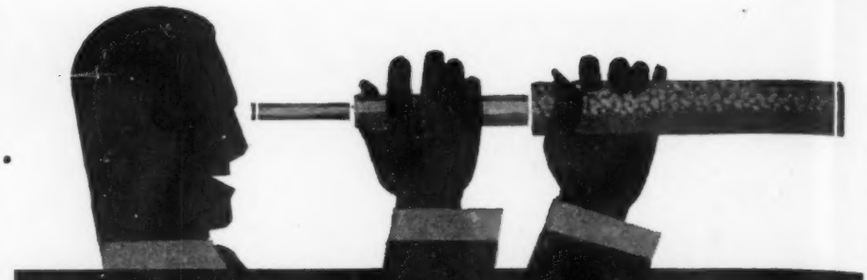

Coming in HYGEIA

ADOLESCENT ACNE—THE SCHOOLGIRL COMPLEXION

By Lester Hollander, M.D.

There is no magic secret of the "schoolgirl complexion," for at that age her (or his) complexion is notoriously apt to be at its worst. But there are measures that will minimize the complexion ills of school days and prevent permanent effects, though they may entail a combination of medical treatment, home care and dietary control. This authoritative article by an author well known to HYGEIA readers (see "IMPETIGO—*It's Contagious*" on page 599 this month) will appear in the September Issue.

REMEDIAL READING

By Dorothy Ingram Lightfoot

Our schools are planned for the "language-minded" child. But many children, often talented in music, mathematics, science, engineering or other lines, are not language-minded. Others, who speak and listen well, have difficulty in writing and read print reflected in a mirror nearly as easily as they read directly. Miss Lightfoot's article on the means of recognizing and remedying these difficulties will be of interest to all parents, and of practical service to many. This article also is scheduled for September.

NEW EYES FOR OLD: CORNEAL TRANSPLANTS

By Max Fine, M.D.

The cornea, the transparent "window" of the eye, was the first tissue known to survive after transplantation from one person to another. All other tissue when thus transplanted is absorbed or slowly replaced by the tissues of the host.

Development of the transplantation technic from an "impractical dream" of 200 years ago to a sight-saving operation that today, in the most favorable circumstances, can restore near-perfect vision is related in this fascinating article, scheduled for Autumn, by a Pacific Coast surgeon.

"Frankly now, Josephine— is Mildness that Important?"

It's a good question, Junior. And the answer is "Yes"!

The makers of Ivory Soap consider purity and mildness so important that many of the 216 quality control tests made during its manufacture are to assure these qualities.

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QUESTIONS and ANSWERS

Plastic Surgery

Question:—I would like information concerning an eye operation, changing a slant-eyed Oriental type of eye to Caucasian, which comes under the scope of plastic surgery.

Answer:—Decision on surgical correction of an eye deformity of this type would have to be made in any individual case by a qualified plastic surgeon. The type of deformity commonly known as an epicanthus lends itself to an excellent type of repair. Other conditions are variable depending upon the nature of the disfigurement.

Honey for Ulcers?

Question:—A friend of mine who had a gastric ulcer for several years started taking honey for it a few months ago. Now he says he is entirely well, and can eat anything he desires. I have a stomach ulcer, and naturally am interested in anything that might bring relief. What do you think of this treatment?

Answer:—The course of certain types of stomach ulcer is characterized by periods during which complaints may decline or even disappear regardless of medicine or other treatment. This fact, as well as the helpful influence of mental suggestion, makes it difficult to offer a truly scientific evaluation of the treatment in such instances.

In the case of your friend, for example, there is a possibility that ulcer complaints may return, even though he continues to take honey, within the next few months or years, and especially if he should be exposed to nervous tension or undue fatigue.

The chief constituents of honey, dextrose and levulose, have no actual treatment value in peptic ulcer. However, the ability of it and many other substances to bring about a "faith" cure must not be belittled, even though the relapse from such cures may be disappointing.

It should be emphasized that there are several different varieties of stomach ulcer. Those known as "benign" respond most frequently to simple dietary measures. Other types remain completely unaffected, and may progress to such serious complications as hemorrhage or perforation of the stomach wall. Finally, the possibility of cancerous degeneration must not be overlooked.

For these reasons, no one should attempt to make his own diagnosis of the type of ulcer present or to decide what treatment is indicated. The wisest procedure is consultation with a physician to rule out possible serious forms of the condition.

Nearsightedness

Question:—I would like to know whether it is possible to correct nearsightedness with an operation, so that glasses can be avoided.

Michigan.

Answer:—There are two operations for nearsightedness that have been recommended: first, removal of the crystalline lens (this is the operation that is done for cataract) and second, shortening of the eyeball. The latter operation is an exceedingly delicate one and is not always successful. It is often attended by the loss of sight, and occasionally by loss of the eyeball.

The cataract operation is much more frequently successful but glasses would be required following this operation.

A third possibility, that does not involve surgery, is fitting contact lens on the corneas. Whether the patient would be benefited by the contact lens or some form of surgery would depend on the condition of the eyes.

Answers given here are limited to brief replies to specific questions. Full discussion is not intended. Questions involving diagnosis or treatment should be referred to the family physician.

The patient should be examined by a competent ophthalmologist (eye physician), who can advise him properly.

Asks About Hair Growth

Question:—Would it be possible to remove the scalp from the head of a bald-headed man and replace it with the scalp of a person having a "good head of hair?" Would the Rh factor have to be considered? Would the two people have to be of the same sex? What glands control the growth of the hair? When a person inherits a tendency toward a "weak scalp," what weak glands has he inherited?

Connecticut.

Answer:—Transplanting of scalps has not proved successful. The Rh factor would not have to be considered, but the basic blood types would have to be the same. If the operation could be done, the two individuals would not have to be of the same sex. Infectious conditions such as syphilis would have to be excluded.

No special glands control hair growth. The chief factor in its normal growth is believed to be a general satisfactory condition of the body. It is generally recognized that baldness is to some degree an inherited quality, but this has no relation to "weak glands."

A CORRECTION

Through an oversight, the pages on "Hay Fever" in HYGEIA for June, 1947, referred to a proprietary product called anthallan. This product has not been accepted by any of the councils of the American Medical Association and the evidence as to any value that it may have in hay fever is certainly inconclusive.

Ultraviolet Radiation

Question:—I wish to install a germ-killing lamp in my home for the protection of my family. What is the best type of lamp to purchase?

Pennsylvania.

Answer:—Disinfecting ultraviolet lamps, to which you apparently refer, are not recommended for homes. The Council on Physical Medicine of the American Medical Association has accepted disinfecting ultraviolet lamps for use in hospital wards, baby cubicles and operating rooms where the activities of the occupants are under supervision and there is better control.

Expert attention to details of the installation is necessary to provide adequate protection. The ultraviolet radiation must not be so strong that reflected rays will burn the skin. Precautions must also be taken against

(*Continued on page* 582)

During the hay fever season nasal passages are unusually sensitive. Pollen alone may not be responsible for your sneezing . . . cosmetic allergens often cause increased discomfort, too.

Marcelle hypo-allergenic Cosmetics are formulated especially for the allergic woman. Known allergens have been omitted or reduced to a minimum. Enjoy the refreshing beauty care provided by these carefully tested cosmetics. Widely prescribed by physicians. ★ Write for six sample beauty aids 10c. Blond, brunette or auburn. ★ Advertised in American Medical Association publications for 15 years.

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the dynasty of the Ming began its historic rule of China. Soon the fame and importance of the new "porcelain" town of Cheng-te-Chen rose to new heights. Factories were built to satisfy the demand of the Emperor and his court. Today the porcelain and three-color ceramics of that period have become collector's items because of the excellent quality of design and workmanship. The porcelain of that period bears the mark of the Ming dynasty, as shown here.

MARKS OF MERIT

In 1947

many manufacturers use the Wisconsin Alumni Research Foundation seal to attest the Vitamin D content of their products. This mark guarantees that the products bearing the Foundation Seal of Approval are tested in the Foundation's laboratories at regular intervals to make certain they measure up to its high standards and rigid requirements. Over the years the medical profession has come to advise its patients, "Look for the Foundation Seal" . . . when buying any product with a Vitamin D content.

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WISCONSIN ALUMNI *Research* FOUNDATION
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WHO'S WHO

(*Continued from page 574*)

roots are now "deep in the desert soil of Tucson, Ariz." Mrs. Bell is the author of books for children and a contributor to such magazines as "Better Homes and Garden," "American Home" and "Good Housekeeping."

LIKES TO PLAY

The unusual playlet that appears on page 604 was written by STANLEY P. REIMANN, M.D., who lists among other responsibilities that of being director of the Lankenau Hospital Research Institute and the Institute for Cancer Research. After nine lines of impressive biographical material he said, "That ought to be enough except that I like to play the piano especially playing two-piano pieces with someone else."

NOISE EXPERT

Although MARION BROWNFIELD was born in Massachusetts she has spent the greater part of her life in California where writing and teaching occupy the greater part of her time. Having constant contact with children and parents she has many opportunities to "study noise" and how to soft-pedal it.

In addition to producing a prodigious number of articles, Miss Brownfield is the author of "The Courtesy Book" for mothers and children. In addition to her writing her hobbies include flowers, music and interior decorating.

A BUSY PERSON

After graduating from Wellesley College and the Harvard School of Public Health, writer RUTH A. THOMAS became an instructor in bacteriology, and later of applied bacteriology, at Cornell Medical School.

At the present time she is connected with the Division of Biologic Laboratories, Massachusetts Department of Public Health where she is participating in epidemiological studies covering the preparation and use of various products for professional and lay education. As if this weren't enough she is editing one of the volumes of "Global Epidemiology."

MISSION FOR HEALTH

DR. JOHN CAMINOPETROS, co-author of "Health Conditions in Greece," appearing on page 600 in this issue, came to the United States in behalf of the Greek people and the Greek Medical Association. A leader in Greek science, he is director of the Pasteur Institute of Athens and a former vice-president of the Greek Medical Association.

MEAT

A Complete Protein Food

In order to sustain life, not only must the foods eaten provide enough protein, but the protein must be biologically complete, able to satisfy the needs of the body.

A protein is "complete" when it contains all the indispensable amino acids—indispensable because they must be supplied by the foods eaten, since the body itself cannot manufacture them as it can others.

If even a single one of these indispensable amino acids were lacking in the diet for a prolonged time, the body would have to draw on its own protein reserves in the tissues to satisfy the needs of the many processes for which protein is required. Eventually the body's tissues would break down, the production of digestive enzymes and hormones would cease, red blood cells, worn out in the process of living, could no longer be replaced, and finally life itself would cease.

Meat, regardless of cut or kind, is *a complete protein food* because its protein provides all of the indispensable amino acids. As a source of protein meat ranks high not only because its protein content is so high, but also because it is available in such wide variety of taste and kind that it can be eaten at virtually every meal without jading the appetite, and—last not least—because it is almost completely digestible (96% to 98%).

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

AMERICAN MEAT INSTITUTE

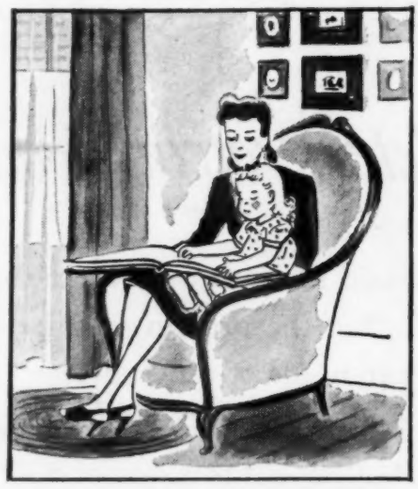
MAIN OFFICE, CHICAGO . . . MEMBERS THROUGHOUT THE UNITED STATES

HELPFUL MODERN POINTS OF VIEW

Suggestions we hope you will find helpful and interesting

Some suggested "first steps" for parents wanting to encourage children's interest in

ART



Just sharing your young child's enthusiasm for pictures he finds in colorfully illustrated books and magazines is one of the latest methods advocated for developing youthful art appreciation.

WHILE SEARCHING for pictures of some certain object he finds appealing, it is suggested you may find it helpful to his increasing awareness of form and color to point out things about these pictures: "how fast the boat seems to be going"; "how round the orange looks"; or "let's see if we can name all these colors".

AS YOUR CHILD'S knowledge grows and his interest and perceptions develop, you may find he'll enjoy being introduced to some of the world's great paintings—beginning again with familiar subjects. While Museum visits may not be practicable, it is now possible to enjoy many museum advantages through color reproductions.

MANY SUITABLE, inexpensive reproductions are now obtainable from art museums and also by mail from many art publishers. Letting your child's choice determine selection of these reproductions where possible, you may find him taking great pride in his own growing art "collection".

These suggestions for youthful art appreciation are from MISS LOUISE CONDIT, *Supervisor of the Junior Museum in New York's famed Metropolitan Museum of Art.*

FOR OBTAINING inexpensive art reproductions by mail, you may welcome this list of some art publishers, any of whom will forward free catalogues on request.

ARTEXT PRINTS, INC., WESTPORT, CONN.
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RAYMOND & RAYMOND, 40 EAST 52ND ST., NEW YORK 22, N. Y.
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Wrigley's Spearmint Gum
is your standard of quality for complete chewing satisfaction AD-141

Questions and Answers

(*Continued from page* 579)

the release of excessive amounts of ozone that may be highly irritating.

If one could spend all of one's time in a home provided with ultraviolet radiation without coming in intimate contact with infected individuals there is some possibility that a measure of protection might be obtained. Such an arrangement would not be practical because one would be unable to leave the house and mingle with people.

Since the ultraviolet rays must not directly irradiate the occupants, only the portion of the room above the level of the eyes is available for irradiation. Many infections come from droplets discharged from the nose and throat, and unless proper isolation can be maintained, one may be infected before disease germs in the droplets can be destroyed by radiation. This manner of spreading disease cannot be prevented by ultraviolet radiation in schools, theaters, waiting rooms or other places where people congregate and where there is a fairly constant turnover in attendance.

Blood Pressure

Question:—As a result of many blood donations within the last six years, my blood pressure has dropped to about 100. Can you tell me what diet will bring it up again?

Washington, D.C.

Answer:—There is a considerable doubt that blood donations can be responsible for permanent lowering of the blood pressure, and it is questionable whether your stated blood pressure is any indication for concern.

There are countless people with systolic blood pressure reading of 100 or even less who are entirely normal. The important reading in these cases is the pulse pressure. This is the difference between the upper or systolic pressure and the lower or diastolic pressure. The usual range is between 30 and 40. An individual with relatively low systolic pressure may not have all the energy and aggressiveness of one with a higher pressure, but at the same time the outlook for a long life for such a person is certainly more favorable. There is no special diet that is of value in correcting low blood pressure but many heavy eaters do develop high blood pressure.

INSURING SAFETY

Two physicians writing in the *Medical Journal of Australia* have urged that special typing technics should be used to insure safety in transfusions from women who have given birth to children or any person who himself has been the recipient of a blood transfusion.

THE SMOKE NUISANCE

The coal-burning steam locomotive constitutes one of the most serious single health menaces in the urban air pollution picture. This is particularly true for heavily industrialized cities located in regions prone to natural large scale fogs or to nocturnal fogs from a hill and valley topography such as one sees around Cincinnati and Pittsburgh.

Coal-burning steam locomotives contribute (1) carbon particles, that would be harmless if pure but that have condensed on them varying loads of tars, some of which have been found definitely cancerigenic in animals; (2) fly-ash, that is probably more damaging than carbon soot to the human respiratory tract, especially in setting up chronic irritative states; (3) noxious gases, especially the oxides of sulfur, that form corrosive acids when dissolved in water, and (4) exhaust steam, which itself is not harmful but which is liberated into cold-winter air in far greater amounts than the air can hold as invisible water vapor and hence must remain as a steam cloud.

During stable winter weather phases of low air motion there is often formed a stratified ceiling 500 to 800 feet above the ground. Into this pocketed air mass the locomotives exhaust their stream and polluting materials. Natural fog tendencies are thus greatly accentuated, and the suspension and rapid accumulation of all flue products in this surface fog mass leads quickly to "smogs."

A recent U. S. Public Health Service survey (The Journal of the American Medical Association, Feb. 1, 1947, p. 334) indicated that about a fourth of the total pollution in the Chicago area is contributed by the coal-burning steam locomotives, but their output of exhaust steam to hold the polluting materials suspended easily gives them a first place as a public health menace.

Death rates from pneumonia, tuberculosis and respiratory tract cancer provide a clear index of the damage air pollution inflicts on a city's population.

This increase takes place mainly in individuals who are in the polluted atmosphere a greater portion of each day. The relation between sootfall and respiratory disease death rates is highly significant on a statistical basis and should lead public health and housing authorities to a keener appreciation of the importance of air pollution in the high respiratory disease death rates of slum pollutions. Interest in air pollution and the steam locomotive's contribution is becoming keen and countrywide. Diesel engines provide the best answer to this phase of the problem, for with them the emission of water and solid particles is reduced to a minimum.

Can you answer these questions about

HIGH BLOOD PRESSURE?

Q. What is high blood pressure?

A. High blood pressure, or hypertension, is a condition in which the pressure of the blood against the walls of the arteries and their smaller branches shows a persisting and large increase above normal. A temporary rise in pressure, such as may result from physical or emotional strain, is a perfectly normal reaction, and is NOT high blood pressure. However, if such rises occur frequently and are excessive, they may indicate a tendency toward hypertension in later years.

Q. What are the causes of hypertension?

A. Sometimes high blood pressure is associated with kidney ailments, local infections, or glandular disturbance, but the cause in most cases is unknown. It *is* known that hypertension occurs most frequently among those who are *middle-aged or older*, those who have a *family history* of hypertension, and those who are *overweight*.

Q. How does hypertension affect your health?

A. Persistent high blood pressure makes your heart work harder and nearly always results in enlargement of the heart muscle. The arteries are usually affected; there may be damage to kidneys, eyes, blood vessels of the brain, and other organs. Fortunately, *if discovered early*, hypertension can often be controlled.

If you have periodic physical examinations your physician will check your blood pressure regularly. His guidance can probably help you keep your blood pressure down, or, if it should go above normal and stay there, he may be able to start corrective measures at once, before serious damage has been done.

Real hope for those with high blood pressure

Thanks to modern medical science, people with high blood pressure today can often avoid serious complications, and enjoy a long and happy life . . . especially if the condition is discovered in its early stages.

In many cases treatment such as diets, rest, elimination of infections, reduction of weight at least to normal, and special drugs may be necessary. Surgery has been used effectively in some instances, and psychotherapy has proved helpful at times in removing fear of the disease and lessening emotional strains.

Medical science is constantly increasing its knowledge of high blood pressure. Aiding in this work is the Life Insurance Medical Research Fund, supported by 150 Life Insurance Companies, which makes grants for special research in diseases related to the heart.

To learn more about this subject, send for Metropolitan's free pamphlet, 87-Z, "Blood Pressure—Everybody Has It."

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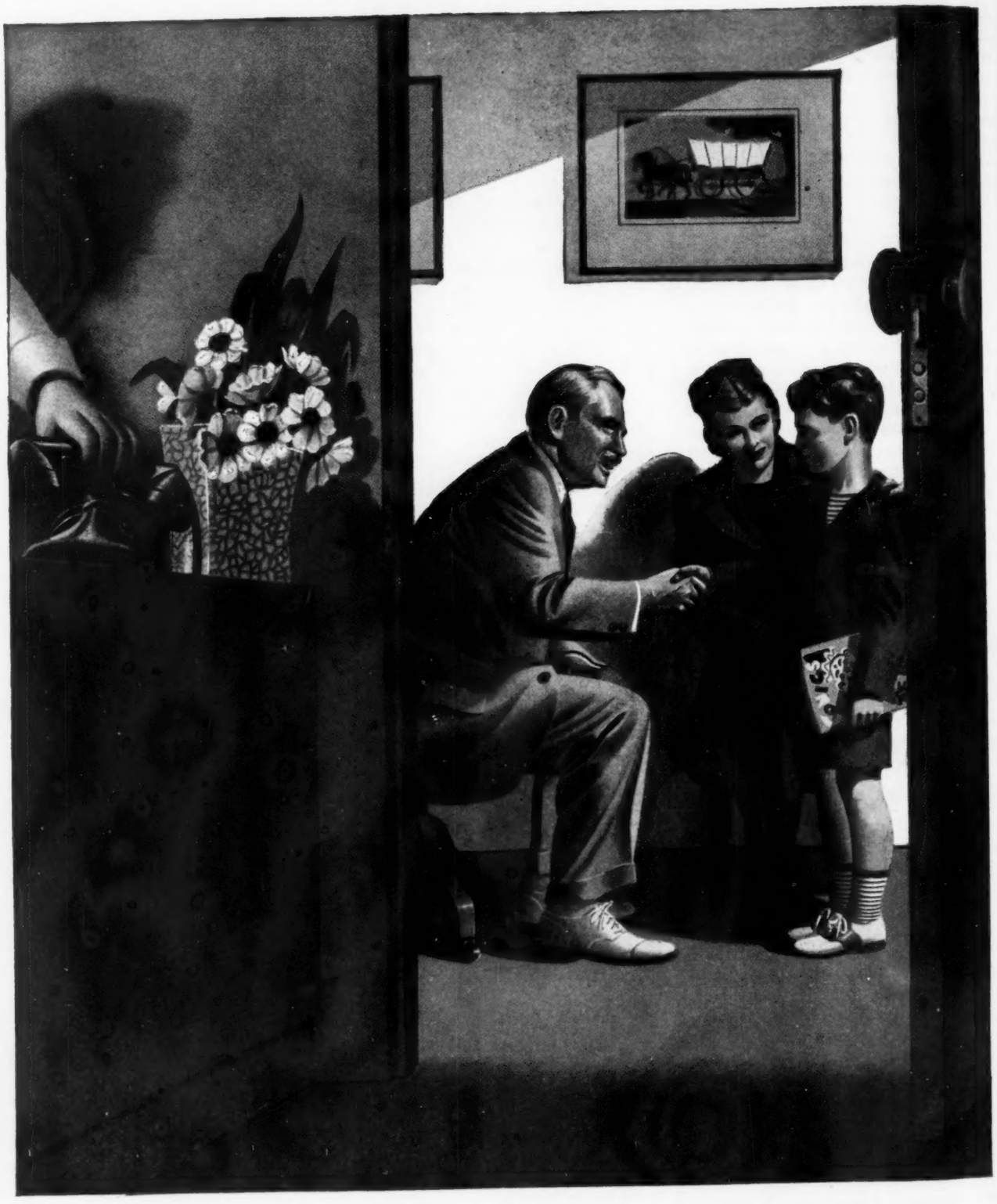
TO VETERANS—IF YOU HAVE NATIONAL SERVICE LIFE INSURANCE—KEEP IT!



GETTING ACQUAINTED... the new family in town makes a friend and confidant of the physician they select. They will share many troubles with him through the years as their lives become part of the community he serves. And in Summit, New Jersey, new families learn to know their good neighbor, Ciba Pharmaceutical Products, Inc., and the attractive laboratory buildings.

IS FOR VACATION

An Editorial by W. W. BAUER

VACATIONS are intended to give you vim, to renew your vigor and to restore your vitality. Too often, vacations are taken in vain and the outcome is void, if not vicious, as far as health is concerned.

Vacation comes from the word "vacate" which means to empty, to depart or to leave. For a really good vacation, we need to empty our minds of routine business, depart from our accustomed haunts or at least from our accustomed habits, and leave behind us the cares of the rest of the year.

There is universal agreement on the need for vacations. Doctors recommend them even when they cannot take them; business executives grant them to their employees even when they themselves go right on working; organized labor is demanding vacations as a prerogative of the job.

The usual vacation routine consists in spending two weeks before the vacation in hectic preparation; two weeks of vacation follow, often devoted to excessively strenuous activities or overcrowded schedules; the next two weeks are spent in recovering from the vacation. Theoretically, one should return from vacation rested; actually the usual vacationer comes limping back with peeling nose, sore muscles, mosquito bites all over the schoolgirl complexion and a fervent vow never to be so foolish again.

In this postwar season, vacationers are crowding every means of transportation and every resort. They are thronging the highways to such an extent that gasoline rationing in time of peace faces the nation in an unprecedented situation. Yet the essentials of a good vacation are available anywhere.

The first requirement is really to get away from the job. Taking a job home is principally the vice of the executive rather than the routine employee but there are people who worry about their jobs while on vacation. Some worry for fear that the job may be gone when they get back. Some are concerned about incomplete tasks left behind. Some have the idea that the office can hardly get along without them. There is no use even attempting a vacation unless all such foolish ideas are cast aside. You may go to Alaska or Panama and it makes no difference if you carry the office in your luggage.

The second essential is a genuine change of activity. The vacation is the time to indulge the hobby which work has crowded out of busy hours during the year. Now is the time to paint or putter, to dig in the garden, to loaf on the beach, to hike or bike in rural by-ways—or for the outdoor worker, perhaps now is the time to sprawl on shady porches and read and read or perhaps just sprawl. Now is the time to do exactly what you want but not until you want to do it. Many a busy routine worker would ask nothing better for a vacation gift than fourteen alarm clocks—one to toss out the window each morning when it rings.

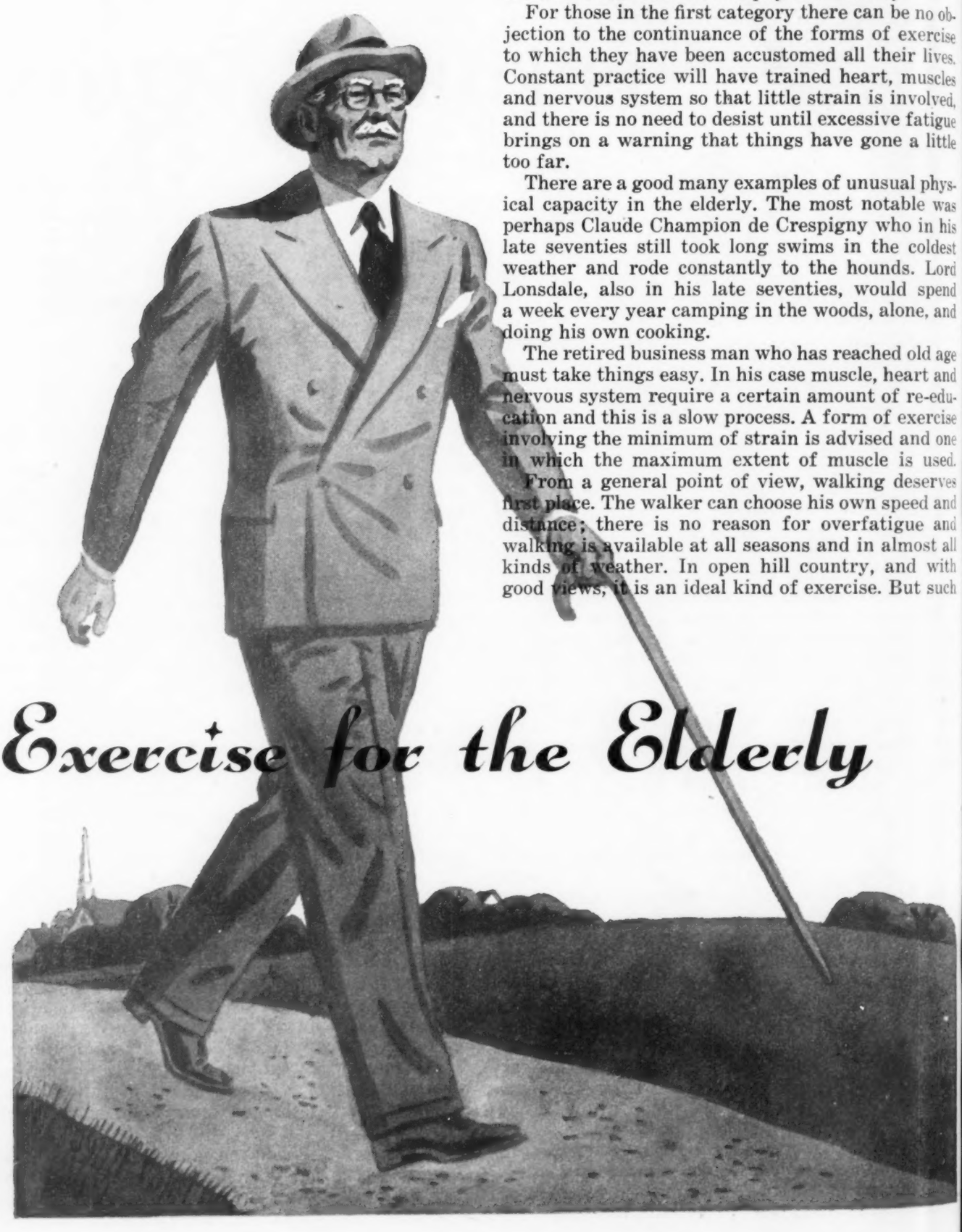
For change of environment, you do not necessarily need to leave home. You may take your vacation with your family if you have little opportunity during the year to do things together, or separately if you have been reasonably close throughout the year. There is no reason why a family which attends parties and goes to movies, theatre and sports events in a group throughout the winter should consider it necessary to vacation together in the summer, especially if their ideas about a good vacation do not coincide. They will all have a happier time if father goes to his favorite fishing grounds, mother to her dress-up resort, sister to visit with friends in another city and Butch to the Boy Scout camp. Returning, they will have new topics of conversation, new things to tell one another and a new appreciation of one another's virtues.

By the same token, a vacation need not be expensive. If it costs so much that it embarrasses the family budget for months, it has defeated its main purpose because it has given cause for anxiety to the elders in the family. With ingenuity, a vacation can be tailored to any family budget by taking advantage of nearby recreation, opportunities for picnics, swimming, hikes, visits to points of interest and leisurely comradeship with one another and with friends.

It has been well said that a good job can be done in fifty weeks per year but not in fifty-two. The two weeks are reserved for the necessary vacation.

Exercise for the Elderly

by E. P. HERMAN



THE question as to what form of exercise the elderly should take and to what extent it should be indulged in requires a great deal of consideration. Elderly people fall into two main classes: those who have continued from early life to lead active outdoor lives, such as farmers, laborers, many engineers, and so on, and those who have lived an entirely sedentary existence and who find themselves, at the age of 60 or over, with the leisure and the desire for some sort of physical activity.

For those in the first category there can be no objection to the continuance of the forms of exercise to which they have been accustomed all their lives. Constant practice will have trained heart, muscles and nervous system so that little strain is involved, and there is no need to desist until excessive fatigue brings on a warning that things have gone a little too far.

There are a good many examples of unusual physical capacity in the elderly. The most notable was perhaps Claude Champion de Crespigny who in his late seventies still took long swims in the coldest weather and rode constantly to the hounds. Lord Lonsdale, also in his late seventies, would spend a week every year camping in the woods, alone, and doing his own cooking.

The retired business man who has reached old age must take things easy. In his case muscle, heart and nervous system require a certain amount of re-education and this is a slow process. A form of exercise involving the minimum of strain is advised and one in which the maximum extent of muscle is used.

From a general point of view, walking deserves first place. The walker can choose his own speed and distance; there is no reason for overfatigue and walking is available at all seasons and in almost all kinds of weather. In open hill country, and with good views, it is an ideal kind of exercise. But such

country is not available to all, and under other conditions walking has disadvantages. The jarring impact on the feet from pavements and hard roads is not very comfortable, and in time leads to fatigue.

If you are not too weak to walk a few miles, cross-country hiking is most desirable. Do not travel the same ground time after time, but select different routes; the interesting in new surroundings will add to the physical benefits. Join a walking club. This is one of the best things an elderly person can do for his health. The companionship and new personal contacts mean a lot more than you may suppose.

Even if taken alone, your walk may just as well be something more than a walk. Take the opportunity to cultivate erect carriage, deep breathing, an energetic stride. In specific corrective exercises, the more intently the mind is focused on the work, the better; but in your outdoor constitutional, be sure to cultivate the play spirit.

Horseback riding is another form of exercise suitable for the elderly. Bicycling is also a form of physical movement to be considered. A little bicycling in a terrain that is not too trying is excellent for those with some arthritis in the knee joints, for the rotation of the pedals produces a combination of active and passive movement which is highly beneficial.

Swimming must be treated with respect by the elderly. The sudden contact with cold water creates a shock which not every system can withstand. If weather conditions are unfavorable, there is a liability to chills. Swimming is an ideal exercise, owing to the fact that all the muscles are brought into play, but there are many who will do better to avoid it.

In the matter of gardening it is mainly a question of common sense. Most of the movements required involve stooping, an excellent thing in moderation, tending as it does to promote suppleness of the muscles of the back and abdomen, but not to be recommended for those with high blood pressure—especially if practiced in hot sunshine. The elderly gardener should wear a hat, or confine his work to the early morning or late evening, and he should not persevere too long at heavy jobs but alternate them with the lighter tasks.

As a game for the elderly, golf has a definite place. Whether the effect is beneficial or the reverse depends upon the ability and mental attitude of the player. For the elderly man who plays badly, the game is not to be recommended. Incorrectly played shots put severe strains on the muscles; repeated efforts to get out of the bunkers or long grass tax temper and physique. The mental depression produced by a series of very bad rounds is out of all proportion to the importance of the occasion.

But the elderly man who can strike the ball with effortless rhythm, and who seldom leaves the fairway, may confidently expect that golf will enrich his life. The mental tonic of beating younger men is exhilarating, and golf is one of the few outdoor games where this is possible.

Bowling is another game suitable for the elderly. It has, however, the disadvantage that even for the elderly it scarcely provides enough exercise. Broadly speaking, the elderly man should select the form of exercise that he enjoys most, and probably this will be the one at which he is most competent. He should discover for himself the maximum amount that he can manage without fatigue and regard this as the proper amount.

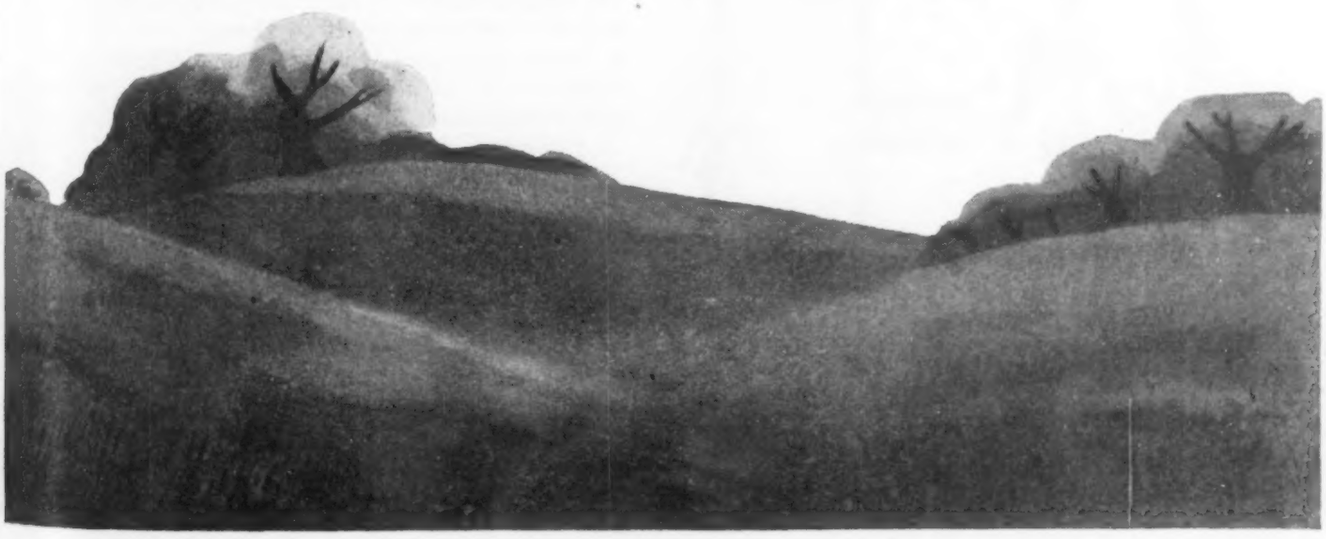
The man over 50 is not particularly interested in developing muscle. What he desires is organic health. It is for this reason that his exercise should be mostly of a general nature like walking, swimming, gardening and golf.

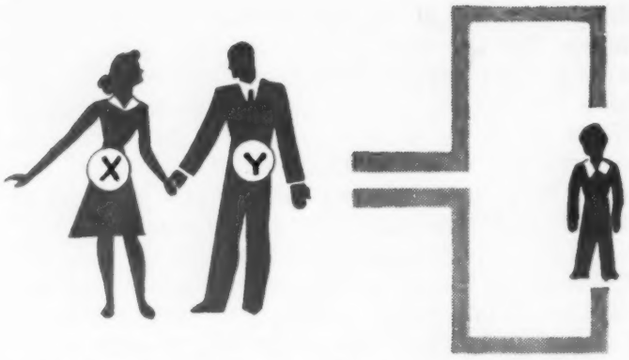
The following exercise mildly uses the pectoral muscles on the upper part of the chest, encourages better posture and exercises the lungs.

Lie on a narrow lounge or bench, face up, hold a book in each hand, and straighten out your arms at right angles to the body. Holding the elbows stiff, start with the hands as low as you can get them (or on the floor), and carry them upward until they meet above the chest. As you lower the books, inhale as deeply as you can without strain. Exhale very gradually as the arms come up.

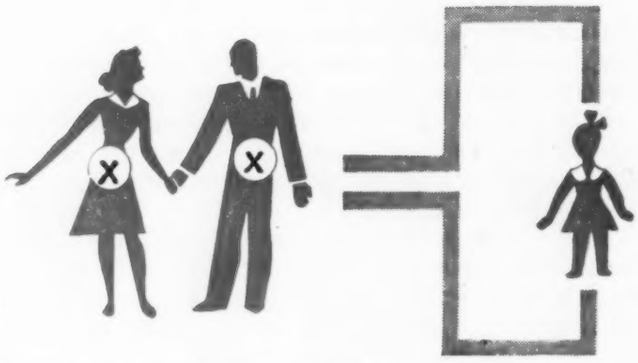
The following movements, intended for the exercising of the important muscles of the waistline, should be practiced at the bedtime hour or late afternoon. Lie on your back, the feet under something heavy enough to hold them down, fold your arms across your chest, and rise slowly to a sitting position without bending the knees.

If this classic exercise—for many of us learned it in childhood—now (*Continued on page* 634)

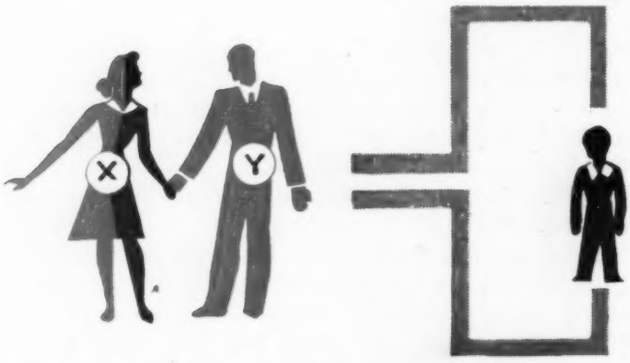




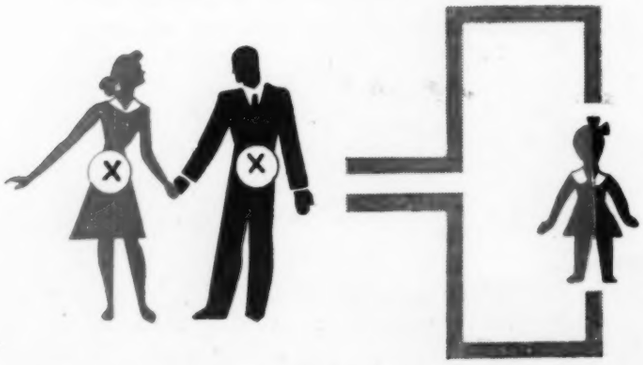
Normal X + Y produces normal boy.



Normal X + X produces normal girl.



Carrier X + Y (even if father is normal) produces a boy who may (50-50 chance) inherit color-blindness or other sex-linked trait.



Normal X + X from a color-blind father produces a girl who will be a carrier of the trait to her own children.

JOHNNY came home from school perplexed and bewildered. During the last hour the teacher exhibited color charts and called on the pupils to recognize them. When Johnny's turn came she held up a poster in a color that to him always had been known as green, but when he said it was green, the children laughed at him for being so "dumb."

Susie, who was sitting next to him, said, "Shame on you, Johnny. You know that color isn't green. It's red!" The entire class agreed with her and thought Johnny extremely stubborn when he continued to insist that the color was green.

The truth is that Johnny was color-blind. He could not distinguish certain colors, especially shades of red, from green. Red appeared green to Johnny because he was born that way, possessing the hereditary deficiency known as "color-blindness." Although some other kinds of color-blindness are known, the form most commonly encountered is the red-green type. Actually, in the human family, about 10 per cent of males and 1 per cent of females are color-blind.

Since the beginning of the present century, many traits in human beings have been found to behave like color-blindness. They are what biologists call sex-linked characters, appearing commonly in men and but rarely, or not at all, in women. In all, something like twenty sex-linked characters have been recorded in man, most of them behaving like color-blindness.

The heredity of color-blindness has been worked out, and it may serve as a pattern for virtually all of the other sex-linked traits. When a color-blind man marries a normal woman, all of their children appear to be normal. The sons are perfectly normal in ability to recognize colors and devoid of any hereditary factors or genes for color-blindness; but although the daughters seem normal, all of them are carriers of the color-blindness factor and may hand it on to following generations.

When one of these carriers marries a normal man, color-blind boys may result. And while the girls produced from that marriage will not show any evidence of the trait in their own vision, half of them will carry the color-blindness gene and transmit it to their children in just the same pattern as their mothers transmitted it to them.

When a woman who is a carrier marries a man who is color-blind, and only then, it is possible to get a color-blind girl—and she will also be a carrier of the gene.

All this seems confusing to the average person. It becomes clear only when it is realized that color-blindness is a sex-linked character, the inheritance pattern of which follows the same general scheme outlined as that which determines sex, described in an article in the September, 1946, issue of HYGEIA. It is necessary only to refresh one's memory regarding the salient facts.

Sex is determined through the medium of special chromosomes, X from the mother, X or Y from the father. The XY combination gives origin to a boy, the XX combination to a girl. If it be assumed that

the gene for color-blindness also is carried in the X chromosome, then one can readily explain its inheritance.

The X chromosome from a color-blind male carries the gene for color-blindness into the newly formed indivdual. When a spermatozoon containing such an X combines with the egg of a normal female possessing a normal X, a girl is produced having one gene for color-blindness and another for normal vision.

Here the normal gene overshadows the color-blind one, resulting in a seemingly normal girl who is, however, a carrier of the trait.

A woman who is a carrier gives origin to two kinds of eggs: in one kind the X or sex chromosomes carry the gene for color-blindness; in the other they are without it. When a spermatozoon with X fertilizes an egg in which X contains the

SEX-LINKED FACTORS *in* Heredity

by NATHAN FASTEN

gene for color-blindness, a girl is produced who is a carrier for the trait. When such a spermatozoon fertilizes an egg with X lacking the color-blind gene, a normal girl results.

On the other hand, when a spermatozoon with Y fertilizes an egg in which the X chromosome carries the gene for color-blindness, a color-blind boy is initiated. If the Y spermatozoon fertilizes an egg possessing a normal X, a perfectly normal boy is conceived.

As mentioned previously, students of heredity have recorded about twenty other human traits that are sex-linked. In addition to color-blindness, the following are some that are most commonly encountered: night blindness coupled with near-sightedness; paralysis of the eye muscles, making it impossible to move the eyes; a juvenile type of the eye disease, glaucoma; Leber's disease, causing optic atrophy with blindness in center of eye only; oscillating eyes, or oscillopsia, causing tremor of eye, with weak vision; absence of sweat glands; and hemophilia, the absence of coagulating elements in the blood.

Although the heredity of these traits is quite similar to that of color-blindness, there exists a slight difference in the case of hemophilia. This blood defect appears exclusively in boys and not in girls. The reason for this is that the gene for hemophilia, in addition to causing the blood defect, is lethal, producing death when it exists as a double dose within an individual. This would be the case where both of the X chromosomes in the XX combination that initiates a female carried genes for hemophilia. A combination of this sort never gets an opportunity of developing very far, and is soon killed off. The net result is that no such human females ever are born. On the other hand, the single gene for hemophilia in the X chromosome of the male combination leads to the production of a boy who is a "bleeder." Where only one of the X chromosomes in a female possesses the gene for hemophilia, she is a carrier, capable of transmitting the defect to some of her sons.

In recent times, this sex-linked character of hemophilia has been dramatically brought to the attention of the public through the press and the motion picture. Some readers will recall that two of the sons of the ex-king Alphonso of Spain bled to death as a result of injuries received in automobile accidents. They inherited this trait from their mother, who was a carrier of the gene. In her, however, hemophilia never appeared, since the gene for it was present in single dose only and was dominated by the gene for the normal condition of the blood.

In the motion picture "Rasputin," produced some years ago, the main theme was woven around the illness of the little Czarevitch, heir apparent to the Russian throne, who was suffering from hemophilia, and of the attempts of the doctors to control or cure the disease. When the medical men found this impossible, the royal family, especially the Czarina, turned to the monk, Rasputin, who held out hope of healing her young son through hypnotic or supernatural powers.

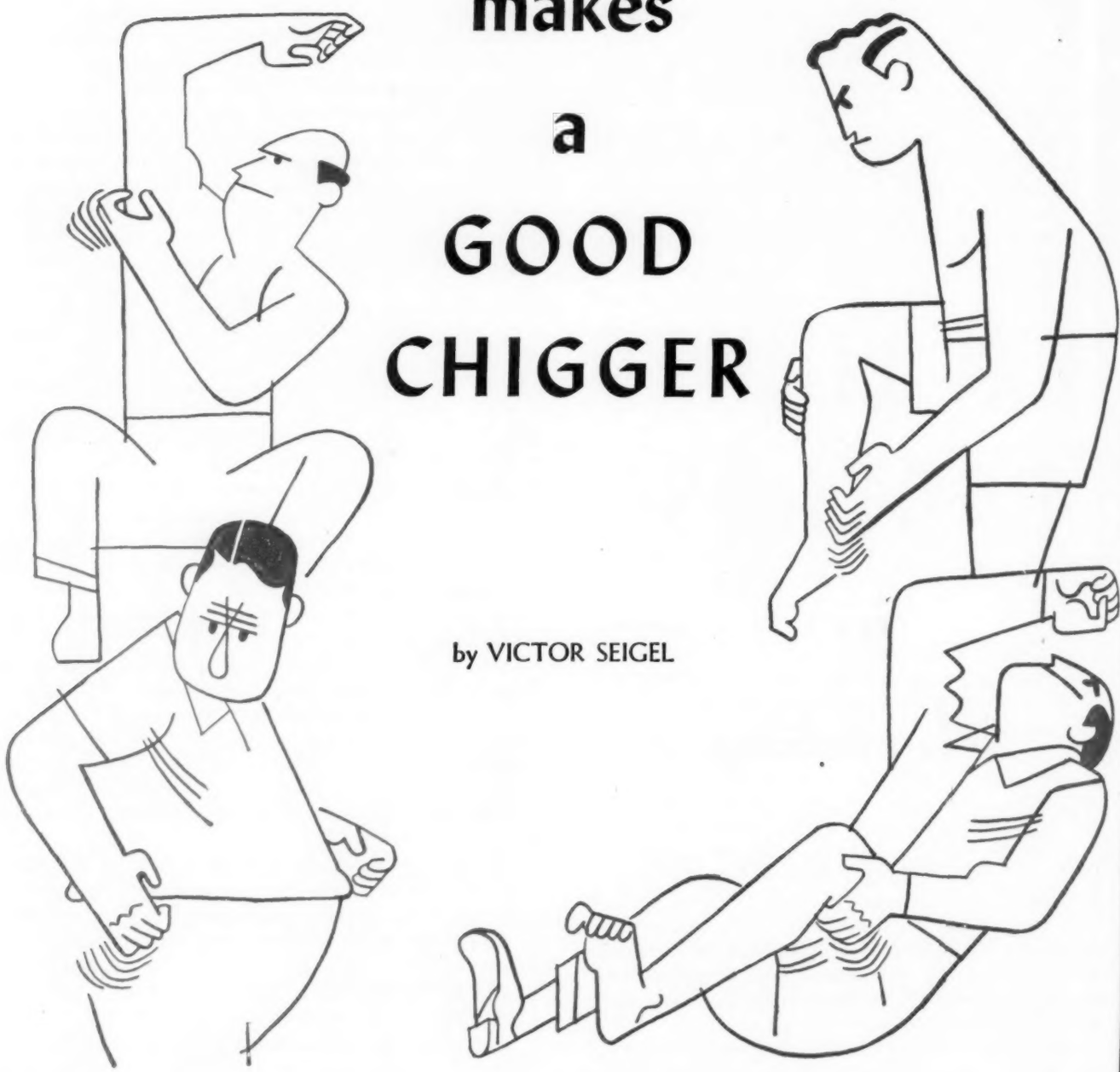
Ultimately the Czarevitch died, but by that time the influence of the monk had become so great that through intrigue and evil machinations he completely dominated the royal family and through them the entire nation! This hastened to bring about the bloody revolution that overthrew not only the monarchy but also the entire Russian autocracy.

As in the case of the Spanish royal line, the little Czarevitch inherited the gene for hemophilia from his mother. The late Czarina, although seeming perfectly normal, nevertheless was a carrier of the hereditary factor for hemophilia and transmitted it to her son.

On first examination, occurrence of these cases of hemophilia in such widely divergent royal families as the Spanish and Russian would seem to indicate that they were unrelated. However, a more careful scrutiny has revealed them to be definitely associated. The Queen of Spain and the Czarina of Russia both were granddaughters of Queen Victoria of England.

Although some 250 cases of hemophilia have been recorded by students of human heredity, the line stemming from Queen (*Continued on page* 641)

what makes a GOOD CHIGGER



by VICTOR SEIGEL

THE patient's body was covered with a rash; his face, hot with fever. The doctor prescribed several days in bed; his diagnosis: chiggers.

"Impossible," said the patient. Of course, he had been roughing it in the woods for several days. Of course, he knew that the small hard red bumps scattered over his body were chigger bites. Of course, the itching was all but intolerable. But, surely, his rash and fever must have some other, deeper cause.

But there was no other cause. And this patient was no unusual case for the doctor. Frequently during the summer months, he had to give medical attention to especially susceptible persons following a severe chigger attack. Not only had he been called to the bedside, but often people had come to his office with what they believed were eczema, food rash, flea bite and other skin eruptions, but which proved to be the results of exposure to chiggers.

And many times he had received patients with serious secondary infections that resulted from scratching the chigger bites.

Naturally, it's impossible when going through the woods and meadows where chiggers are abundant, or even on our own lawns, to avoid coming in contact with them. That is true throughout most of the United States, certainly all the South. And often the "fleas" that tourists complain about in Latin America, especially after sightseeing trips to ancient ruins, are only the larger and "hotter" chiggers that grow in the warmer countries below the Rio Grande.

Even if chiggers do not send us hurrying to our doctors, they can take a great deal of enjoyment from a summer vacation or camping trip. But we need not accept chigger bites as an unavoidable part of the inviolable order of things.

"We can greatly reduce chigger annoyance by taking certain precautions to avoid being bitten, by effectively treating bites, and by spraying or dusting the chigger breeding places," says Dr. Leonard Haseman, Missouri Agricultural Experiment Station specialist on insect control for more than 40 years.

The chigger is an animated pinpoint that lies in wait at picnic spots and raises welts around the ankles, back of the knees, in the crotch, under the arms and about the waistline.

In order to understand and apply preventive measures against chiggers, says Dr. Haseman, we must know something of their nature and habits.

The chigger is really a juvenile delinquent. Its parent is the inoffensive, bright red, spider-like mite that we often see crawling slowly over the ground when we spade our gardens. Its food is waste or dead organic matter.

But baby needs the blood or lymph of a live host for its nourishment. Any warm-blooded animal, or snake, toad or turtle will do. And so will you.

Baby is swift afoot and ambitious. He scurries onto your shoes or any other accessible part of your body and like all ambitious creatures works upward. Because he is no larger than a pinpoint, he can often penetrate the meshes of your clothing.

Once having reached your flesh, he runs around for several hours either possibly to work up an appetite or with joy at finding so much food on the hoof.

This enthusiasm seems to be dampened, however, when he reaches such obstacles as a garter or belt, and rather than cross over the obstacle or go under it, he stops without further ado and begins to feed.

"The chiggers' piercing and mouth organs are short and delicate," says Dr. Haseman, "and as a result, it can penetrate only thin skin or where the skin folds. Most chigger bites, then, are found around the ankles, back of the knees, about the crotch, in the armpits, and under the belt line."

The chigger does not burrow into the skin. He attacks, as does the tick, by inserting his mouth organs. Then he injects a fluid which keeps the blood from clotting. This fluid, similar to that of the mosquito, soon causes the characteristic red blotch at the tip of which a small water blister is formed within a day. While this itching bump is easily seen, the tiny red chigger at its tip is effectively camouflaged by the inflamed surface.

A chigger is an unpleasant guest for anyone. But the only way to make him feel unwelcome is to make yourself as inhospitable as possible. The way to do this is by protective clothing and chemicals.

In the way of protective clothing, tightly woven socks, high shoes, tall laced boots, or spiral puttees woven tightly about the legs from the top of the shoes to the knees are advised by Dr. Haseman.

Among chemical protectives, sulphur, pyrethrum, or derris powder applied to shoes, stockings, trouser legs, ankles and wrists are particularly effective. "Hypo," used in the photographic darkroom, or one of the regular commercial fly sprays is helpful.

In addition to one or more of these suggested measures, it is well to change clothing and take a hot, soapy bath as soon as possible after exposure to chiggers, if you're fortunate enough to have civilization nearby. You may find this the only precaution necessary, provided you can bathe at once, while the chiggers are still running over your body too happy over finding so much food to dig in before the hot, soapy water rushes over them.

You might also hang your infested clothing, for it surely will be infested, out in the hot sunshine for a few days. Chiggers like shady, moist places.

If during the summer your home seems to have become an island surrounded by chiggers, you can reduce their number by mowing the weeds and briars around your home, by close-clipping your lawn, and by elimination of all unnecessary shade.

Where natural shade is abundant, advises Dr. Haseman, one pound of ordinary dusting sulphur to each 1,000 square feet applied to the lawn three times at ten day intervals may be effective. State parks and public playgrounds, says Dr. Haseman, use a one per cent emulsion of kerosene in sufficient quantity to moisten the vegetation.

Last summer, a group of girls going out on a camping trip included among their supplies several bottles of nail polish. Fastidious? Well, aren't most girls?

But the nail polish wasn't for their nails. One of the girls had discovered that nail polish applied to a chigger bite can take away the itch.

But if you should prefer a preparation other than nail polish, Dr. Haseman suggests household ammonia, one per cent cresol solution, rubbing alcohol, camphor, chloroform or iodine.

These preparations, including the nail polish, not only relieve the irritation and prevent secondary infection, but serve to make the chigger, if he hasn't already been removed by scratching, a good chigger. They kill him.

IS THAT OPERATION SAFE?

Recent advances in surgical technics, the new antibiotics and better care for the patient before and after operation make the answer a reassuring affirmative

by
ROBERT H. KENNEDY

FEAR of an operation has been characteristic of a great many people. Of course there is danger in an operation, but there is danger also of being hit in crossing the street. There were 33,500 deaths from motor accidents in 1946, but you do not stay out of automobiles for this reason.

There is sufficient advantage in riding in an automobile so that you do it anyway. Most operations are sufficiently to your advantage to take the chance and in many instances you are in much greater danger if you do not have the operation done. Much has been done to diminish the dangers, at the same time that the variety and magnitude of operations have greatly increased.

In an emergency operation a person is no longer put on the operating table until after fluid has been given him if he is dry, nourishment if he is starved, blood if he is anemic, germ-fighting medicines called antibiotics, such as penicillin, if he is infected. All of these can be injected into veins if the stomach does not tolerate food. Before the surgeon will operate careful survey must show that the patient is in the best possible condition considering the emergency.

Formerly ether was the only anesthetic and many patients feared vomiting after the anesthetic almost more than the operation. Now there are a large number of methods of anesthesia and drugs for the specially trained anesthetist to choose from, each having a place according to special indications—local and spinal anesthesia with which you are not even asleep; intravenous anesthesia, where you breathe nothing into your lungs, inhalation anesthesia with a finely geared machine which delivers exact proportions of several different gases. Most of these are accompanied by breathing oxygen so as to maintain body functions and keep all tissue in good condition. Vomiting because of any anesthetic is becoming a rarity.

During almost every year it is found that some condition is amenable to an operation previously unknown. Many persons formerly condemned to death, or to a life of permanent disability or discomfort, can now be returned to normal life. There is practically no area left in the body which cannot be approached surgically with safety.

TRACTS in the brain can be cut to improve greatly the condition of some persons previously confined in insane asylums. Defects in the skull resulting from accidents, followed by the apprehension that some one may hit you in the uncovered spot, can be filled in completely and permanently with a metal or plastic that the tissues

Blue Cross Plan photo

tolerate nicely. A new drug, thiouracil, has made operations for goiter much safer and resulted in less reaction.

Nature was generous in furnishing us with far more of almost every organ than is needed to support life. Therefore one lobe or a whole lung can now be removed. Chronic infections of the lung, as well as cancer, were almost hopeless until surgical intervention was proved practical. Abnormalities of the major blood vessels within the chest can be sidetracked so that children who, a few years ago, would probably never have lived to grow up, can be made fit to carry on in adult life.

Stomach ulcer is a common disease, incapacitating and recurrent. It has been customary, if trouble continued after two or three courses of medical treatment, to cut out a large portion of the stomach. The results have been good. Now an operation to cut the nerve supply to the stomach gives promise of accomplishing the same result without sacrificing the stomach. Results over the last four years have not shown the usual rate of recurrence of ulcer symptoms.

DISEASE of the liver resulting in shutting off of its necessary circulation is being relieved by shunting the circulation to other vessels through metal tubes. Formerly, blood would clot in these tubes but now ways have been devised to line them with the lining of blood vessel walls and they work as well as the orginal.

Any damage to the pancreas, an organ lying behind the stomach, was formerly a dreaded complication. Now the whole or a part of the pancreas can be removed for cancer, cyst, or other cause and life continues in its usual course. Operations such as this could never have been performed without years of experimentation in the laboratory to find substitution products for the (*Continued on page* 642)

A FOOT AT A TIME

by BETTY L. ECKERSALL

PRE-HISTORIC MAN

"NO MATTER how far the journey one can only go a foot at a time." This old Spanish proverb is as true today as it was when it was coined. But how does one take these steps through the days, weeks and years of life? Are they easy or difficult?

This, of course, depends on the footing that naturally reverts to shoes. Do you know the history of the footwear you are wearing now? Probably not, so let's glance back through the centuries and retrace the shoe prints up to today.

Shoes have played a significant role in man's physical, religious and social customs for years. From the Biblical Song of Solomon, "How beautiful are thy feet with shoes, O Prince's daughter," to the Mother Goose rime of "The Old Woman Who Lived In A Shoe," all shoes, the smallest and largest of them, are interwoven throughout history.

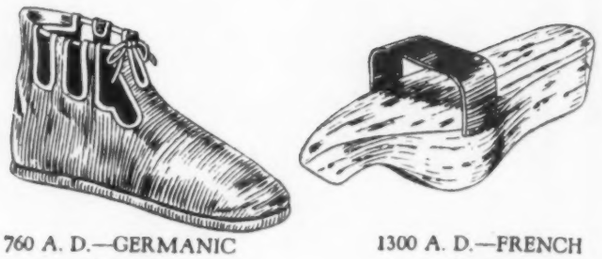
100 A. D.—ROMAN
Cothurnus

450 A. D.—GOTHIC
Primitive Sandal

1450 B. C.—EGYPTIAN
Sandal

Since hunting was the chief occupation of earliest man, animal skins, according to fascinating historic details compiled by the industrial group headed by the International Shoe Co., were probably the first material used in making shoes. Archeologists have made these deductions as to the origin of shoes from the implement discoveries of the Neolithic period. These implements were suited to leather working and could have been used for sewing skins.

The earliest type of footwear was the moccasin worn by the North American Indians that was similar to the moccasin worn in Northern Europe during the Bronze Age. During the era of wandering herdsmen footwear styles varied with the climate. For instance, the sandals worn in the warm countries and the furlined boots worn in the colder climates.



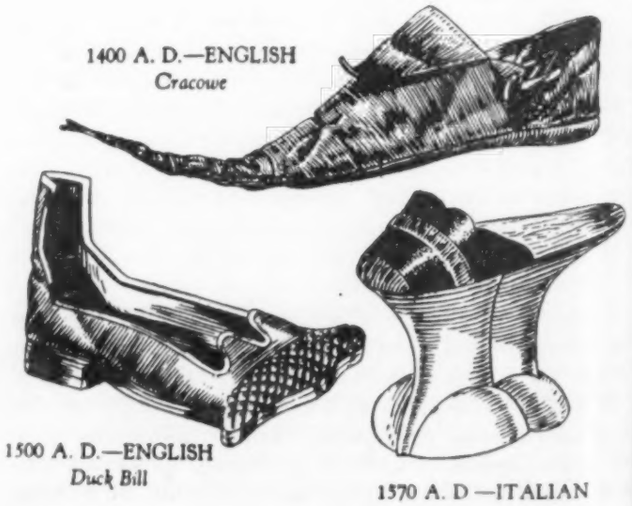
760 A. D.—GERMANIC
Buskin

1300 A. D.—FRENCH
Patten

Development of the great civilizations of Mesopotamia and Egypt gave the world the three standard footwear types—boots, shoes and sandals. The boot with the peaked upturned toe worn by the Hittites and seen on their stone reliefs was later adopted by the Phoenicians and the Etruscans.

The Egyptian footwear style, designed to enhance rather than obscure natural contours, was the sandal. When Grecian civilization rose to its height the sandal became the national foot covering there as it had in Egypt, for in Greece as in Egypt, loose-fitting clothing and freedom of movement were stressed with few restrictions tolerated.

The Romans copied their footwear from Greece but since the life of the Romans was governed by form and etiquette a great deal more than that of the Greeks, their shoes became more elaborate and detailed. It is recorded that Emperor Nero, to give the populace a relative idea of his importance, had his sandals studded with emeralds and diamonds.



1400 A. D.—ENGLISH
Cracowe

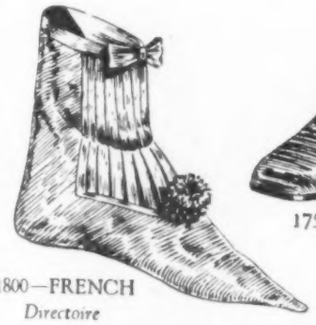
1500 A. D.—ENGLISH
Duck Bill

1570 A. D.—ITALIAN

1650 A. D.—ENGLISH
Louis Quinze

1670—DUTCH
Gentleman's Shoe

Throughout the early Middle Ages, Byzantium, later Constantinople, was the principal source of all innovations in dress. There the Christian ideal of dress brought about a radical change from the classical views. The classical idea was to glorify and display the body; the Christian believed in obscuring and concealing it. The idea was manifested in the Byzantine shoe that was concealing, did not distinguish between the shape of the right and the left foot and so made walking clumsy and ponderous.



1800—FRENCH
Directoire

1750 A. D.—UNITED STATES
Quaker

Illustrations by Courtesy of International Shoe Co.

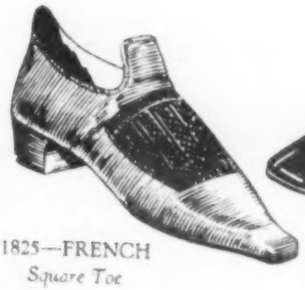
Christianity had another effect on footwear. It gave us the patron saint of shoemakers, Saint Crispin. Crispin, descendant of a noble Roman family, embraced Christianity, then against the law, and fled with his brother to Gaul. He worked as a shoemaker in the town that is now Soissons, and distinguished himself by spreading Christianity and by his deeds of charity. According to the legend he even stole leather to make shoes for the poor. Both he and his brother were martyred and in their honor October 25 is known as Saint Crispin's Day.

During the Middle Ages the development of crafts led to the organization of guilds, and among these was the guild of London shoemakers, the Cordwain's Company, whose name was derived from the town of Cordova, the center of Spanish leather production. This guild is mentioned in 1272, while the Shoemaker's Guild of Ghent is noted in 1304 and the Brotherhood of Paris Shoemakers in 1370.

In England, as well as the rest of Europe, the toes on shoes became so long and ridiculous that the English Parliament found it necessary to legislate against it in 1463 by banning shoes with toes or "beaks" more than two inches beyond the toe.

Queen Elizabeth took care of the third dimension in shoes by heightening the heels of her slippers to add to her queenly stature. Meanwhile the fashionable ladies of Venice were featuring the use of high Oriental clogs, called "chopines," that were really wood blocks with shoes on top of them. Actually it was the old idea of caste and rank again, an effort to rise in society the easy way.

Heels also became higher on men's shoes after Louis XIV decided that what was good for an English Queen was good enough for a French King, too, and consequently had the royal shoemakers raise his heels with cork to make him appear taller. Unfortunately all his courtiers copied him so that the desired effect was lost, much to Louis' disgust.



1825—FRENCH
Square Toe

1830-65—UNITED STATES
Adelaide

The nineteenth century saw another change in the history of footwear—the rise of the shoemaking industry in America. The first shoemaking in America was recorded in 1629 when Thomas Baird arrived on the second voyage of the Mayflower, with a contract with the Massachusetts Bay Company to make shoes for the colonies.

Shoes worn by the early colonists were simple and plain. They were crude, illshapen, low around the ankles and often ornamented with silver buckles. Shoemakers were at first itinerant cobblers who traveled from settlement to settlement and remained with each family long enough to make shoes for the entire family.

Many of these cobblers were skilled in other trades too and could sharpen knives, saws and axes,

1885-1889—UNITED STATES
Boys' "Dress Up"

1885-1889—UNITED STATES
Toothpick Toe

1895—UNITED STATES
Child's Wellington Boot

1875-80—UNITED STATES
Creedmore

cut hair, pull teeth and perform other odd jobs in addition to being animated newspapers by carrying gossip from one location to another.

In 1750, John Adams Dagyr, a Welshman, arrived in Lynn, Mass., and established the first shoe shop to operate the factory system successfully in America. Each worker performed only one operation in the construction of a shoe and, as a result, Dagyr is considered the father of American shoemaking. During this period the making of great numbers of shoes for stock was inaugurated.

People, having only worn custom made shoes, did not endorse this new method at first but later it gained in popularity. The establishment of the "ten foot" shops around 1800—they derived their name from their limited sizes—was the first countrywide attempt to put shoemaking on a factory basis.

Following the Revolution there was a slump in the manufacture of shoes because England and France were exporting great quantities but a tariff in Congress against foreign-made shoes later encouraged local industry.

Up until this time there had been few developments in shoe machinery. Shoemakers worked with practically the same type of tools that had been used in Egypt in the days of the Pyramids. This was not through lack of effort, however, for Napoleon, in trying to obtain better shoes for his soldiers, had offered rewards for the perfection of shoe machinery and other persons had tried to produce shoe machines without success.

In 1818 a new machine —called the Kimball last made rights and lefts possible. Up to that time shoes had been interchangeable —a convenience if one took one's shoes off during a lengthy church sermon though it was not quite the last word in comfort.

The rolling machine that pounds and toughens leather was invented in 1845 and this was followed three years later by the revolutionary invention of the sewing machine by Elias Howe. The sewing machine was subsequently adapted to the shoe trade by John Nichols and perfected by Isaac Singer. Shoe production increased and one manufacturer reported with pride that he was producing the astounding total of sixteen pairs of shoes every day.

Despite these inventions shoemakers were still stitching shoe soles by hand until a machine devised in 1858 by Lyman Blake at last convinced them that machines could perform as effectively and much more rapidly. The entire shoe machinery problem was finally solved in 1899 by the formation of a large concern known as the United Shoe Machinery Corporation, that organized complete systems of machines for bottoming, heeling, and finishing shoes. Performance of complex operations by machinery has now been developed to a point hardly paralleled in any other industry, even in this industrialized country.

The manufacturing of shoes today is a complex process. Actually as many as 291 separate items, 53 different kinds, of various costs and purposes, may be used. Too, there are 515 distinct steps in the manufacture and sale of one pair of shoes designed along scientific lines to provide the utmost in style, fit and comfort.

The importance of properly fitting shoes to one's health can not be minimized. Foot experts state that next to the heart the feet are the most overworked parts of the body for despite modern transportation, the average American still walks many miles a day.

It has been estimated that a woman shopper walks approximately 8⅓ miles daily; the letter carrier totals 22 miles; the average housewife more than 10 miles and people in special occupations like the farmer (when plowing) 25½ miles. Foot abuses can cause muscular fatigue and affect other parts of the body in such a way as to cause harm to the circulation and nervous system.

The care you give your feet and the selection of shoes for every occasion is essential to your good health, efficiency and physical activities in all walks of life. Remember that good feet are a sure step to help prevent accidents.

Remember too, that the same foot condition exists in the summer as in the winter. In summer it's necessary to wear shoes that let cool air in to the foot; in winter to let warm air out. Many people have suffered foot trouble in cold weather because they wore shoes that did not (*Continued on page* 645)

TEN BASIC RULES

Wash Frequently
Bathe your feet once or even twice a day, dry them thoroughly and use foot powder afterward.

Change Often
Never wear the same pair of shoes two days in succession, and change socks or stockings once or twice a day.

Trim Right
Cut your toenails straight across and not shorter than the flesh.

Wear Right
Wear shoes of good material, both soles and uppers, and pick the right shoe for the right occasion.

Fit Right
Be sure you have the proper size of shoe, the proper last of shoe, and the proper size of sock or stocking (half-inch longer than longest toe).

Exercise
Limber up your feet at intervals—they have muscles too, remember. Wiggle your toes!

Keep Dry
Don't needlessly get your feet wet and don't let them stay wet from perspiration.

Walk Right
Cultivate good posture and give your feet proper support with proper shoes.

Don't Neglect
Have your own and your children's feet examined at frequent intervals to guard against ailments.

Take Care
Don't be a "bathroom surgeon." If your feet need attention, consult a qualified chiropodist or podiatrist. Your physician can give you the names of several to choose from.

by LESTER HOLLANDER

WE SHARE the world with countless inhabitants and are completely unaware of a great many. Since we are unable to see them, most of the time we do not even suspect their presence though many are part and parcel of our own particular personal environment.

Every human being in a sense is a motile island in the atmospheric ocean and by no means uninhabited, for he carries his own flora and fauna in the form of micro-organisms, popularly termed germs, in astronomical numbers.

The vast majority of these parasitic nonpaying guests inhabit the outermost horny layer of the skin. Here they are kept at continuous struggle to survive the natural rhythmic exfoliation of the epidermis. They are hardly established in housekeeping when the terrain they occupy lifts, separates from its surroundings and is shed. With this exfoliation myriads of microbe colonies are removed from the skin.

They had mistaken a temporary harbor for a permanent abode.

Just what function these germs perform is not clear. That they are not purposeless we can accept as certain. Otherwise the processes of nature would do away with them completely.

These micro-organisms are not only numerous, they also belong to variable groups, each of which is designated by a family name of its own. Some belong to the staphylococci, others to the streptococci, or pneumococci, or meningococci, or treponema and so on. Some are harmful, some are not. Some are harmful only when they get out of certain numerical bounds, or when a previously established balance with other groups of germs is altered. Some become harmful only when the biologic defenses of the skin falter, or when its continuity is broken or its biochemical impenetrability is weakened.

In this presentation I want to discuss the quarrel of the skin with staphylococci and streptococci—a quarrel which arises when either the bacterial foe becomes too numerous or the defense wall of the body has been undermined. We cannot separate the two foes, for the staphylococci and streptococci seem to live in such close consonance that wherever we find the one, the other is almost sure to take a valiant part in any mischief that arises.

Successful invasion and effective occupation of the skin at various levels by this infamous pair causes a variety of skin diseases. Intrinsically, all these diseases represent the same type of defensive struggle of the body to keep the germs out of its inner bounds, but their symptoms are sufficiently different to warrant special designations for each of the group. Thus:

1. At the outermost level the disease caused is known as impetigo contagiosa.
2. When this happens in a newborn infant it is impetigo neonatorum.
3. In the deeper levels of the skin it is called ecthyma.
4. When the appendages of the skin are involved the disease becomes a folliculitis.
5. Folliculitis of the short bristles, the bearded area, is a sycosis.
6. Folliculitis of the long hairs is Bockhart's impetigo.
7. Folliculitis of the sweat glands and sebaceous glands is called furunculosis or, commonly, boils.
8. Furunculosis of a whole group of sebaceous or sweat glands becomes a carbuncle.
9. Deposit of streptococci and staphlococci on an area of previously existing dermatitis or eczema is called a secondary pyoderma.
10. Inflammatory envolvement of all the layers of the skin is St. Anthony's Fire or erysipelas.

Here I have to limit the rest of this presentation to the first mentioned disease—a sad success story of the staphylococci and streptococci—impetigo contagiosa.

The term "impetigo" is derived from the classical word *impetere*, meaning to attack, while contagiosa refers to the fact that the intrinsic quality of all diseases caused by germs, that of being "catching," is of especially high intensity in this one.

In order to avoid confusion—the terms contagious, infectious, communicable, "catching" or catchy all mean the selfsame quality that enables microbic diseases to spread from person to person unless a specific immunity is accidentally acquired or purposely produced.

Although there is no common name for impetigo contagiosa, I have heard (*Continued on page* 644)

HEALTH Conditions in GREECE

by JOHN CAMINOPETROS

As Told to ROBERT NASH

THE death rate in many foreign countries is higher today than at any other point in their histories. The children of these nations are dying more rapidly than they are born, and the lives of those who survive are being ruined for want of adequate foods and through the inroads of disease.

Take my people, the Greeks, who possibly suffered most as the result of aggressive and inhuman warfare. I am primarily concerned with research. But Professor Valaoras of the Department of Public Health and Hygiene at the University of Athens has conducted as thorough a statistical survey as is possible under present conditions. He says that over 500,000 Greeks are suffering from tuberculosis in some stage. He emphasizes that more than 150,000 of these people are in the throes of an active form of the disease. They must have hospitalization if they are to survive and contagion is to be kept within anything like its present limits.

"But there just aren't any hospitals for these sufferers," Dr. Valaoras points out. "Not only that, we do not even have the trained personnel—doctors and nurses—to see these people, much less give them any care."

Dr. Valaoras has just made a visit to America where he gathered the latest information on public health and hygiene through the cooperation of the United States Public Health Service and the American Medical Association. The statistics on health conditions in Greece that he brought to the United States are appalling. Not only tuberculosis but malaria and a wide variety of other diseases are wiping out Greek lives by the tens of thousands. The death rate is ghastly when compared to any civilized standard.

It is true that the Greek nation has never been one of exceptional health. In fact, the famous

essayist, Ronald Ross, says that Greece was never defeated by foreign armies but was beaten by the malarial parasite introduced to the country during the Persian invasion. He further states that the decline of Athenian splendor coincided with one of history's most insidious epidemics. But conditions today are so bad that they almost beggar description.

"Walk down any road in Greece and you'll see sick men and women," Dr. Valaoras says. "Walk into any Greek home—most of which are unbelievably squalid—and you'll see at least one person desperately ill. Walk into one of our very few community medical clinics and you'll see disease-ridden people eagerly awaiting all too infrequent medical attention. If saboteurs were at work in Greece during the war, certainly many more of them—health saboteurs—are busily undermining the country today."

Dr. Valaoras says that, though the last two years' work of UNRRA in mosquito control promised at least a temporary reduction in these figures, the average Greek has lost over 150 working days a year mostly from malaria. During my trips out of Athens, I have had ample opportunity to observe the tragic effects of this situation. This dreaded disease annually struck down more than 2,000,000 persons in Greece and infected almost 100 per cent of the population. Are these figures so startling? Just compare them with statistics in the United States where the deaths from this cause are almost negligible—only .4 per 100,000 population, according to the United States Bureau of the Census.

But let us go further and look at the situation involving tuberculosis again for a moment. More than 300 of every 100,000 persons die of tuberculosis every year. In the United States, only 41 persons out of every 100,000 succumb to the tubercle bacillus annually—less than one-seventh of the death rate from this cause in Greece.

"In Greece, 25 of every 100 babies die before they reach the age of 21," says Captain Theodore Meyer, formerly of the United States Navy and now Director of the Health Division of Greek War Relief Association. "If you consider that only 10 of 100 die in this age group in the United States, the Greek picture begins to look pretty bad."

Dr. Meyer goes on to say that 35 of every 100 Greeks die before they reach the age of 40. In the United States, says the Bureau of the Census, the death rate under 40 is exactly half that figure—17.5 of every 100. And these figures do not really tell the story because the United States is a nation of older people while the population of Greece is in the younger age group.

The Greek War Relief medical chief in Athens states that every fifth death in Greece is a child under five. Medical authorities estimate that every year the lives of more than 20,000 Greek children could be saved by adequate and early medical attention.

The Evangelical churches in Greece, under the leadership of the Rev. K. Paul Yphantis, recently opened a summer camp for seventy-four children. After several weeks of camp life, the primary purpose of which was moral (*Continued on page* 649)

Dr. Caminopetros says this couple with the sick baby is typical of families who wait for hours at busy medical clinics

Doctor and nurse examine a child with scabies on their rounds with one of the Greek War Relief mobile clinics

Architect's drawing of one of 150 rural Health Centers about which the medical relief plan for Greece is being built

PROTECTING YOUR CHILD from Allergy

by WILLIAM GAYLE ROBERTS

PARENTS who want their children to have the healthiest life possible can accomplish remarkable things today if they give a moment's notice to the prevention of one of the world's dread afflictions—allergy. Perhaps now, as the hay fever season nears its peak, is the appropriate moment.

One great hindrance to conquering this insidious group of diseases in millions of Americans is the apathy with which it is treated by everyone, including parents and prospective parents.

So many shrug their shoulders and moan, "There's nothing to be done about allergy."

They are wrong! There is something to be done. It is called prevention.

Most people do not realize that a great proportion of allergy cases comes from the parents' failure to protect the child. They do not know there are concrete preventive measures to be taken.

Another big reason for indifference is lack of understanding. The nonallergic person simply does not know how much the allergic person suffers—until he sees his own child wheezing and gasping for precious air in a violent attack of asthma, or covered with the sore rash of eczema and hives.

In the least cases, allergy is a nuisance.

In the majority of cases it is intolerable, and at times extremely painful and disfiguring.

In extreme cases it can incapacitate a child for life. It can cripple him, disfigure him, make an invalid of him—and in rare instances, kill him.

It can retard growth, weaken muscle and bone tissue, harm the teeth and sinuses, cause body fatigue.

It can keep him from pleasures of play and friendship.

It can change the whole course of his life.

Specialists in the disease estimate that 50 per cent of the population suffers at one time or another from a mild form of allergy. Ten per cent of the population is afflicted with permanent and violent forms.

Obstetricians and pediatricians stress precautionary measures more each day, but most parents are in the dark as to steps to take to protect their children.

The nation's leading pediatric allergists, in a round table discussion at the ninth annual meeting of the American Academy of Pediatrics at Cincinnati, said:

"Fifty per cent of the allergic cases in the nation may be avoided by stressing certain preventive measures which parents can take."

What we are interested in, then, is: What are those preventive measures? What precautions can

we take to keep allergy from invading our children?

The study of allergy, though 50 years old, is still young in comparison with the study of other diseases; many complex questions remain unanswered and there is much to be solved. Leading allergists and scientific investigators of this disease agree, however, that the causes listed here are the most common ways for a child to acquire allergy; and the preventive measures listed are recommended by outstanding pediatric allergists.

In many cases the obstetrician and pediatrician already follow these preventive measures; but in any case, there is much the parent can do to protect the child.

Acquired allergy is caused by proteins that refuse to be digested. They fight to get out of the digestive tracts and into the bloodstream. Or else they try to enter the bloodstream through various natural portals, such as the nose. Once these hateful proteins escape into the bloodstream they may form what are called antibodies. They fix themselves tightly to a cell in the body and wait for some of their old relatives. When one of their former brothers, a protein of the same type they once were, enters the body and comes in contact with them, the antibodies put on a great battle. The poor human being sheltering these enemies in his bloodstream then shows allergic symptoms.

Thus, when some egg protein gets into the bloodstream and forms an antibody, it is ready to fight the next time egg protein enters the body. The allergic person suffers in proportion to the violence of this battle.

Although a person may become allergic at any age, the periods of greatest danger appear to be before birth, in infancy and in early childhood. One is especially vulnerable during illness and convalescence.

Now, let's investigate our problem from three viewpoints: (1) How the child acquires the antibodies that make him allergic; (2) What preventive measures should be taken; and (3) What can be done if the child is allergic through heredity, or already has acquired an allergy.

How the Child Becomes Allergic

Food Allergies: By overindulgence of cravings, or excessive eating, on the part of the expectant mother.

By allowing the infant to take, or giving the infant, any food in excess; this includes excessive indulgence in seasonal or bizarre foods (such as berries, shell food, nuts, etc.).

By transmission of antibodies from the mother via breast milk.

By the introduction of new and raw foods on an irregular schedule during infancy and early childhood.

By the introduction of new foods, particularly certain allergenic foods (to be discussed later), during periods of severe gastrointestinal disturbances such as diarrhea, dysentery and typhoid fever.

By introduction of new foods and allergenic foods during convalescence from those diseases, and other illnesses; and following surgical operations.

Dust and Pollen Allergies: By heavy exposure to specific dust or pollen allergens.

Drug Allergies: By drugs administered in large doses; and by intense treatment by drugs.

By indiscriminate use of external medicaments for the skin and mucous membranes.

Horse Serum Allergies: By inhalation of horse dander.

By the eating of horse flesh.

By repeated injections of antisera containing horse serum.

Eliminate Danger at Its Source

Now obviously the best method of avoiding danger is to eliminate danger at its source. This is what we shall attempt by preventive measures recommended by leading investigators of this disease.

Two terms used in the list of preventive measures should be clearly understood. They are allergenic foods and allergenically-denatured foods.

Allergenic foods refer to those foods which are known to be capable of creating antibodies if they invade the bloodstream.

Allegenically-denatured foods are those foods in which the proteins have been temporarily denatured by a coagulation process making them more rapidly digestible and breaking them into harmless amino acids. These coagulated proteins do not enter the bloodstream through the intestinal wall and are digested before they are able to act as a foreign protein.

There are several ways to allergenically-denature food, but for practical purposes the simplest is by heat. The proteins are coagulated by cooking for varying lengths of time—and it must be done in the presence of water. This is why pediatricians have us stew fresh fruit before giving it to babies, and why they have us use hardboiled eggs, precooked cereals and evaporated milk.

Denaturation is accomplished by cooking most foods in the usual manner, especially boiling in saucepan or double boiler, or in the steam cooker.

How can we prevent allergy in our children? The following preventive measures were recommended by leading American pediatric allergists during the round table discussion at the Cincinnati meeting of the American Academy of Pediatrics.

Precautions Against Allergy

Food Allergies: Women during pregnancy should eat a well balanced diet, without excesses, particularly excesses in allergenic foods such as eggs, fish, nuts, shellfish, raw foods, and so on, or foods in which allergenic foods compose a part.

Raw foods should be avoided during convalescence from disease.

During disease and convalescence, the infant and young child should have only food denatured by cooking, given in small quantities and well diversified. Feeding him a raw egg stirred in glass of raw or pasteurized milk is asking for trouble. A hardboiled egg is generally well tolerated.

During the first year (*Continued on page* 646)

DOCTOR or Cancer Quack

by STANLEY P. REIMANN

Act 1

(Doctor Q. Ack seated at desk in his office. Patient and his son enter. Quack rises to greet them.)

QUACK Good morning, Mr. Jones; and this is your father who is the patient. How do you do? I am very glad to see you. Won't you be seated?

PATIENT and SON Good morning.

QUACK Now tell me the story.

SON Father has had what they call an ulcer on his lower right leg for quite a few years. It has been treated with all kinds of salves and dressings. Once in a while it gets almost healed but then breaks out again. The doctors have told him that he must stay off his feet for a few weeks or more in order to get it well healed, but he has never done that. During the last year he has worn a bandage and it seemed practically healed—but a couple of months ago it opened up again and since then it hasn't healed at all. The ulcer is getting bigger, and it hurts him more, too. Isn't that right, Dad?

FATHER Yes, that's right.

QUACK How old are you, Mr. Jones?

FATHER Sixty-five last June.

QUACK Have you always been in good health otherwise?

FATHER Always, and this thing has been an awful nuisance the last year because I feel perfectly well every other way.

QUACK Did you have varicose veins in that leg before the ulcer started?

FATHER Yes, I did.

QUACK Well, let's see the ulcer.

(Father pulls up trouser leg and Son removes the bandage.)

QUACK Oh, my, my, what a terrible ulcer that is! Why, that is a very bad cancer. That will be very hard to cure *(bends over and examines the leg)*. Oh, yes, I am sure I can cure it. It will take a little while and will be very expensive, for I must use a special medicine I have for curing these things. *(Father and Son look at each other with consternation but brighten when they hear it can be cured.)*

FATHER You say it is a cancer?

QUACK Yes, it certainly is. I can tell it is a cancer *(impressively and with great confidence)* by the way these curious little epithelial curls are keratinized and by the way the new capillaries are developing their endothelium in that peculiar stellate design.

SON But you say you can cure it?

QUACK Oh yes, undoubtedly. I will guarantee that. All you have to do is to have a little patience

and follow my directions exactly. This requires the special medicine that I have the formula for, which was handed down to me by my grandfather, who in his turn got it from an old Indian when he was out in the West. You know, they can say what they want about the old-fashioned remedies but they are often better than these new-fangled ones. Of course, I keep up with modern developments too, and you see that machine in the corner—

(Father and Son gaze with awe at a fantastic contraption of tubes, wires and dials)

—is one of the latest electric apparatuses. I have experimented a long while with the kind that are made by the manufacturers but *(tolerantly)* none of them are exactly right, and so I have modified this on the basis of my rather large experience. By using this, in addition to the salve, it will make the cure quicker and more certain. Then there is another medicine which you must take my mouth every three hours for two weeks, then stop for two weeks because it is too powerful to take continuously, and then start again for another two weeks. This, too, is a secret preparation which only a few people know. Some of the ingredients *(graciously sharing a glimpse of cosmic mysteries)* come from South America, and of course this, too, is quite expensive. I then have a special boot that I put on this leg and that will have still another kind of herb in it. The electrical treatments that I give cause the active principles of the herb to go into the leg away from the ulcer and it is a sure preventive of the cancer wherever this herb gets in the skin.

(Both Father and Son look impressed, the father more so.)

SON We are not rich, Doctor, but, of course, we are willing to make any sacrifice in order to cure this condition. How much will the treatments be?

QUACK Well, the first treatment will include some of the salve and the medicine for internal use, and the boot, and will cost $300. After that, each bottle of the medicine and the salve—both have to be taken together—will cost $25. The electrical treatments will have to be given at least once a week. They will cost $50.

SON But how long does this have to go on?

QUACK Oh, it is a matter of about two months or longer in case the chemistry of your father's body is not what it should be. If it isn't we can, of course, change that into a favorable direction.

SON When would you advise him to begin these treatments?

QUACK Oh, right away. We can start right now. I have two hours. My next appointment doesn't come until then.

SON But this seems like a very expensive and roundabout way of treatment.

QUACK Of course it is, but it is a cancer, and I have hundreds of patients who have had cancer and who will testify to that effect. *(Reaches into desk)* Here are some of the testimonials.

SON Well, we will think about it for a day or two and then will let you know.

QUACK Very well, but read these testimonials and you will see that you have not a minute to lose. *(Father and Son leave. Quack sits back and says)*

Well, I think I have hooked them although the son looks a little bit skeptical.

(Quack goes out. Curtain. Father and Son enter from left and stroll on platform talking earnestly. The son is shaking his head.)

SON You know, Dad, I'm suspicious of that fellow. In the first place he guarantees a cure and nobody can do that. In the second place he talked something of the cells on the ulcer and you can't see cells without a microscope.

FATHER Yes, I am suspicious too. He was certainly too anxious to impress us—and tell us how much it was going to cost! Of course, I am willing to pay anything to do the best possible for this leg. But I want to be sure that it i s the best possible.

SON Well, I think we ought to get another opinion. Let's go to o u r doctor. You know, Dr. White told us a long time ago some of the things you'd have to do to get rid of that ulcer, but you didn't do them. Maybe he'll have some suggestions now.

FATHER *(with relief)* Yes, we'll go to Dr. White. Maybe it isn't cancer after all. *(Father and Son go out.)*

Act 2

(A room in a modern hospital. Seated, the members of the hospital Tumor Clinic; the Chairman, at a desk; a Secretary, and a Nurse.)

CHAIRMAN *(turns to Secretary)* What cases have we today?

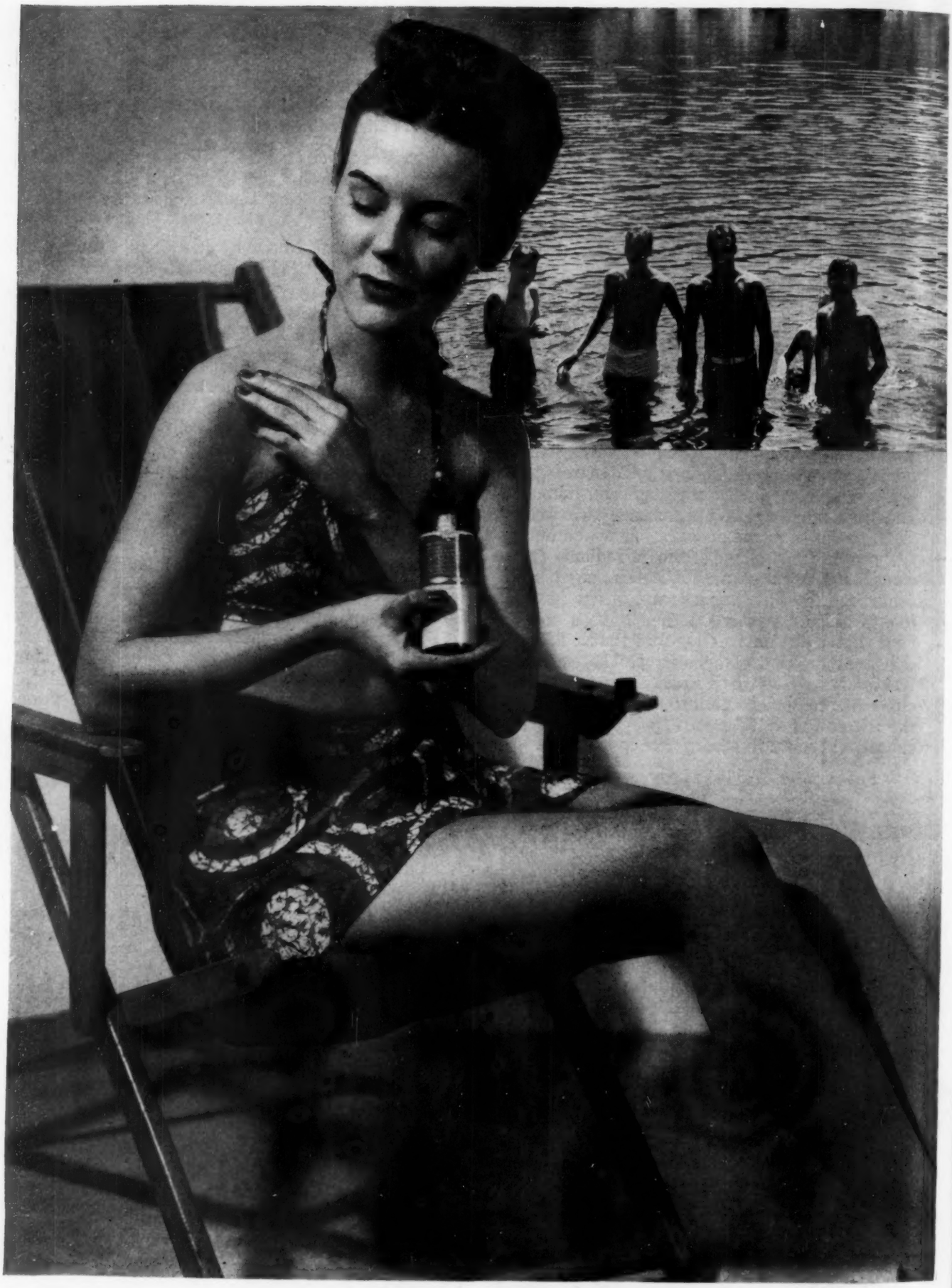
SECRETARY The first case is referred by Dr. White. He called and said that an old patient of his, with a leg ulcer, has a suspicious area around the edge and wants us to advise him what to do.

CHAIRMAN All right. Will you see whether they've arrived?

(Secretary leaves and returns with Father, Son and Family Doctor: Secretary introduces them—Mr. Jones; his son; Dr. White—to Tumor Clinic members)

CHAIRMAN *(to Family Doctor)* Well, Dr. White, we are glad to see you and hope we can be of help to your patient and you.

DR. WHITE Thank you. This patient is a man 65 years old who has had (*Continued on page* 636)



Take the sun slowly at first and use a carefully chosen preparation to protect the exposed skin.

Sun Tan *without torture*

by LOUISE PRICE BELL

THIS is the time of year when most people are doing their best to acquire that golden brown, toasty look called sun tan beauty. Those on the distaff side, in particular, work hard at this whether they are swimmers or just plain backyard sun bathers. In either case, caution is necessary because every year there are many painful sunburns, due to lack of knowledge, or carelessness, on the part of sun worshippers.
Actually, there is no reason for this, nor for red, shiny noses or rough skins.

Sensible outdoor enthusiasts "take the sun" slowly at first . . . a few minutes the first day, a few more the next, and so on. They use sun tan oil or baby oil on the exposed skin before they go into the sun and dust their bodies with a borated baby powder after the shower that follows the sun bath. And as a result they get maximum pleasure from their exposure to the sun . . . and from the rich golden tan they acquire.

Water lovers should know the most important rules for safe swimming; it is so easy to be careless; and the results may be serious. Michael Borodkin, supervisor of 200 expert lifeguards at Rockaway Beach, recently compiled some simple rules that are worth learning. They are the result of this dean of lifeguards' seventeen years' experience; Borodkin holds New York's Medal of Valor for Lifesaving.

HERE ARE THE RULES

Swim in protected areas.
Avoid too much sun and use sun tan lotion for added protection.
Wait at least one hour after eating.
Avoid long distances.
Don't dive unless you know the depth of the water.
Don't leave the children too long in cold water.
Don't be an "acrobat" at the beach or pool.
Don't duck others; it is dangerous fun.
In surf bathing, never dive over a wave; it may be shallow on the other side.
Swim diagonally to current or tide; never buck it.
Swim parallel to the shore, or toward it . . . not away from it.
Keep away from piers and jetties.
Remember that deep water doesn't mean good swimming; the 1936 Olympic tryouts were held in 4½ feet of water.
Don't rely on personal judgment. Ask a guard for information about the beach or pool where you are bathing . . . about currents, tides, rocks and holes.
Walk—don't run—on wet tile; it is slippery and may mean a bad fall.
Don't take a running dive off the side of a pool.
Avoid swimming under diving-boards.
And of course, use judgment about staying in the water; do not overdo.

HOME NURSING

A painted orange crate covered with an attractive washcloth makes a bedside table

A paperboard carton covered with any soft material can serve as a foot rest

A washboard and dishpan for a shampoo help the confined patient to freshen up

To save the home nurse bending, cut holes in wooden blocks and insert bed legs

Cover the backs of two straight-backed chairs and use a pillow as a mattress for an ideal emergency crib

Comforts for the patient and conveniences for the home nurse devised by experts of the American Red Cross

House slippers without heels, roomy and comfortable, can be made from newspapers

For the helpless patient the spout of a teapot substitutes for a glass tube

To move the patient easily any ordinary chair with casters becomes a wheel chair

Red Cross photos by SAM RIORDAN

A restful support for the patient's back may be made from a pasteboard box

For the patient on the road to recovery the artistic touch plus a few safety pins and a towel make a practical bed jacket

by JAMES A. BRUSSEL

Self Appointed Doctors

THE woman in the second seat on the right rubbed her aching temples. The swaying of the bus did not help any. Across the aisle a well meaning passenger leaned over and whispered, "Headache?"

The sufferer raised her eyes. "Oh, yes. I have them now and then, but this one, today . . . it is driving me crazy!" The other woman smiled understandingly and opened her purse. She withdrew a tin of widely advertised headache pills.

"You just take two of these, and in a jiffy you'll never know you had a headache!"

"Well . . . I had intended to see a physician . . ."

"Pah! Doctors! What do they know? Here." Her warm smile and convincing manner dispelled all doubt. The victim of pain swallowed the pills. Eight days later she was dead. Autopsy revealed the cause of death to be a ruptured blood vessel in the brain due to a tumor that, if diagnosed early, could have been successfully removed by neurosurgery.

A WAR veteran was embarrassed and worried about his acute attack of gonorrhea. He avoided his local doctor for fear the neighborhood would learn of his venereal disease. Army experience had taught him that the sulfonamides were specific for such conditions. He purchased a supply at a drug store where sales took priority over questions. Within 72 hours he was hospitalized and physicians were working frantically to stave off death. Injudicious and unsupervised self administration of the sulfa drug had damaged his kidneys.

A HOUSEWIFE noticed that her eyesight was not as good as it had been. She saw spots before her eyes and sometimes had double vision. "Eye drops" relieved her of the excruciating pain for a while. Her friends all concurred on the need for new spectacles. There was no use, they declared, to pay the high fees of ophthalmologists or have some slick oculist sell you an expensive pair of eyeglasses. The neighborhood five cent to five dollar store had a counter where one could try on glasses until proper vision was obtained. A man behind the counter adjusted frames with a pair of pliers in a jiffy . . . and only $2.98! A month later she was blind. Glaucoma!

THESE are but a few samples of the peculiar attitude of too many people that their physical disabilities can be helped by anyone but a physician. At the slightest "miss" in the engine of his car, the average man will rush his automobile to an expert mechanic and in panic-stricken tones plead for an immediate diagnosis and repair, regardless of price! The American housewife, the keenest shopper in the world, will examine with microscopic scrutiny the latest dress she has purchased. Let one thread be broken, one seam a hundredth of an inch out of the way, and the gown is promptly returned.

Sewing machines, electric food mixers, and other household gadgets are oiled and cleaned exactly "as

the book says." Automobiles are lubricated and have oil and spark plugs changed within one-tenth of the mile as dictated by the manual. Laundry, housecleaning, checkbooks and social obligations are not permitted to deviate by one hour . . . but the human body, which cannot be exchanged for a new one and has few replaceable parts, is permitted to suffer neglect and want for expert care.

A large part of this woeful self neglect is due to the myriads of patent medicines ballyhooed by the current "barkers" in the press and on the air. Ingredients in many of these proprietary preparations might be helpful, some even specific, when appropriately used. Others are harmless if taken once or twice, but with chronic usage become devastating poisons too often fatal. Nevertheless, the average person is lulled into a sense of false security by cleverly worded slogans. Listen to any "commercial," for example, that plugs a cure for headache.

It is, says one manufacturer, "compounded just as your own doctor would prescribe." No doctor has a panacea for headaches. Not when pain in the head, or cephalalgia as it is called, is too often a symptom of conditions that range from brain tumor and faulty vision to heart trouble, arthritis of the spine and neuroses. Another advertiser cautiously adds at the end of the commercial a hurried and unaccented admonition that "if headaches persist, see your doctor."

What is the definition of that word "persist"? Days, weeks, months, or years? How long should the victim of high blood pressure give the remedy to eradicate her pounding headache before seeking medical aid? She may suffer a sudden brain hemorrhage and never see her doctor.

There is a tendency among us all to estimate the seriousness of an underlying condition by the severity of the symptom. Hence we tend to feel that a "minor" backache signifies a minor condition—it surely deserves little notice other than to seek relief from discomfort.

But that simply is not true. Nature is a prime deceiver as far as bodily signals are concerned. Serious disease is often heralded by an insignificant sign. Conversely, symptoms that appear to be nothing less than fatal may lead to little more than the fright they produce.

Consider the harassed and embattled business man: "nothing wrong" but a little heartburn and some distress in the lower part of his chest after meals. Beyond the wholesale consumption of various alkaline compounds which afford relief after meals for some time, he gives his minor symptoms no thought. But one day as he is leaving his office building he is suddenly seized with a violent pain in the abdomen and collapses on the sidewalk. His stomach ulcer has finally perforated and the surgeon must now fight to save him from peritonitis.

Had he consulted a physician who would have made certain tests and x-ray studies, the ulcer, in its early stages, might have been cured by simple dietary measures and medication. But no, the radio spot singer liltingly croons, "When acid in-di-gestion upsets you tummy . . . take RELIEVO!" And, if you cannot absorb that kindegarten lesson, the warbler will go on to spell it for you.

ANOTHER spoke in the wheel of indifference to health and hygiene is the mother-to-daughter influence. "Oh, Mother, I'm going to call Dr. Jones. The baby is vomiting!"

"Nonsense! I can tell you what to do. Why, when you were a baby you had the very same thing! Waste five dollars! The very idea! Now, you get the can of dry mustard . . ." Grandma will probably be right nine times out of ten, but if the tenth time is a case of pyloric stenosis or a swallowed foreign body, the end result will be white crepe on the front door.

Grandma is ever ready to match her infallible sixth sense, her innate wisdom, against the ablest trained psychiatrist. One afternoon her daughter confides in the older woman that Johnny, aged five, is becoming more and more seclusive, shuns other children, prefers to mull over picture books and daydream in the privacy of his room.

"Forget it!" Grandma advises. "He'll get over it! I tell you I know children! It's just a phase!"

The daughter timidly mentions a child guidance clinic she heard of at a parent-teacher meeting. Grandma is shocked and aghast. Go to one of those crazy doctors who are crazier that any patients they see? Take up a lot of drivel about development and sexual impulses? Are you out of your mind, girl?

Yes, Grandma knows children; but she won't recognize her grandson ten years later in the state hospital where he sits, hour after hour, staring silently at the wall, a schizophrenic now beyond any help.

The modern conveniences and comforts of civilization, the high standard of living, hearsay, unscientific advice and the average medicine chest stocked with dozens of patent medicines have swerved too many Americans from any reasonable attention to their health. The warnings of nature are usually ignored, probably because they are mild and insidious.

The slight shortness of breath on exertion, the gastric distress, the pain over the eyes, fatigue . . . they mean nothing. And there is always a vitamin preparation—or a detonative laxative—or some analgesic concoction—that the patent medicine manufacturers have ready for any symptom.

Should you be in doubt, you can always seek counsel with your bridge partner, or the man who works at the next desk, or your next door neighbor. These consultants, without fail, have either suffered with the exact, same condition and know a sure-fire remedy or they know some one who has. They are, unfortunately, so disarmingly reassuring, too. Why, it's nothing . . . nothing to worry about.

That may be true. But it is something to find out about—and not from amateurs!

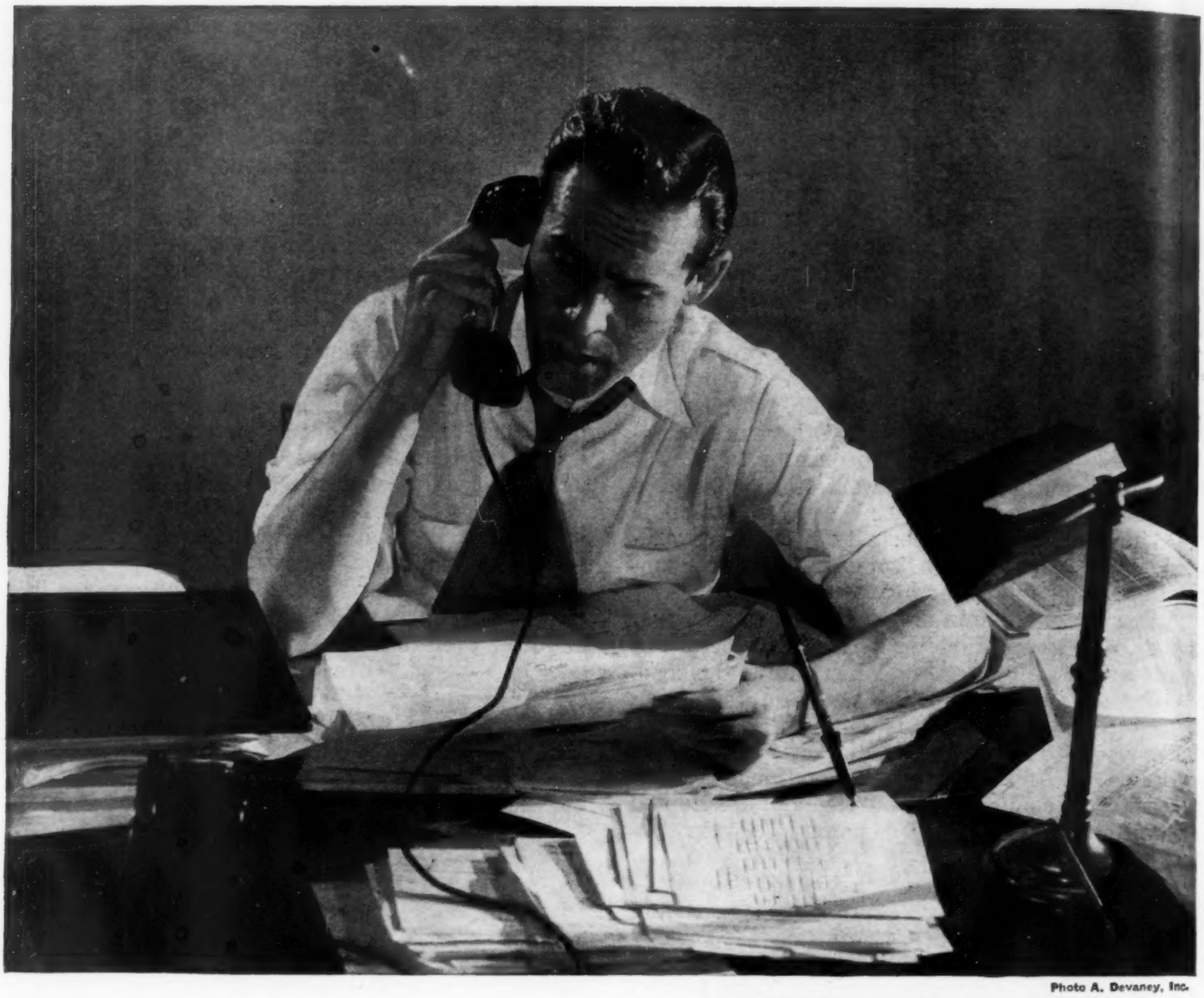


Photo A. Devaney, Inc.

The hard-driving business man sees little need to look ahead, for to him his productive career is everything

PART II

NOW that I am of necessity committed to retirement—relieved, I hope, by authorship of some kind—I should like to do a bit of moralizing about my predicament. It really is no different from that of millions of others, facing the same period of life, for which they are equally unprepared. But why shouldn't they be prepared? Is it because that period is of no importance and can be safely disregarded, or that because of its very importance it is strangely unappreciated?

To those now on the threshold of that period or who will be some day, it becomes supremely significant. Life may be divided into a number of such phases and to the individual in the midst of any one of them, that particular phase becomes the most important. To the octogenarian, his few remaining years are paramount—they are all he has; to the business man, his productive career is everything; to the college student, nothing counts but life on the campus and athletic field. Similarly, to the one faced with retirement, either voluntary or enforced, the years immediately ahead are all that matter.

Then why has preparation for them been so sadly neglected during education and the productive years? Everyone knows of the deleterious effect of a sudden transition from extreme activity, both physical and mental, to inactivity and mental inertia. Yet, so far as I know, except for casual discussions of the desirability of everyone having a hobby —as if such pap could be a permanent solution—no systematic or serious effort has been made either to impress upon people the importance of such preparedness, or to assist them in finding the answer for themselves. As I recall, I have never heard, in school or elsewhere, a serious discussion on the vital necessity for anticipating the idle and nonproductive years to come. Every emphasis was laid on preparing oneself for the future. But that future was the productive period, bounded at the end by a haze to which no one ever gave consideration. Perhaps it was assumed that period would take care of itself or was too remote to consider.

Whether one gives up his active career at the generally recognized retirement age of 64, or two decades earlier as I was compelled to do, he can still look forward to what should be among the happiest

and most carefree years of his existence. But for how few is that promise realized! Instead, most people begin to deteriorate rapidly. They usually become bored, after the initial novelty of leisure has worn off, and wander around completely lost, at odds with everything.

During our business years, we strive not only to provide for our immediate needs, but to store up a sufficient reserve to take care of us in later life. Still a money reserve in itself is not a solution, particularly if we are unable to replace the void incident to retirement with a vital and lasting interest. And by that I do not mean a stopgap or escape. I mean something that will satisfy our inner conscience and direct our faculties in a useful and creative manner.

All of us have known men who approached the age of enforced retirement with dread. To them it meant severing the accustomed ties, connections and routine occupations of thirty or forty years. It meant building an entirely new life for themselves. It meant being off to one side, watching life go by but having no active part in it: no more business conferences, no more important decisions to make, no more happy get-togethers with old cronies to discuss matters of common interest.

Some men miss the significance of all this and think it will be just what they have been looking for: no more pressure, no more strain, no more having to reach the office by 9:30, maintaining organization morale: in other words, no more responsibilities. They usually promise themselves that from then on they will do nothing but play and enjoy themselves and never again do anything irksome. Sounds perfect! But how long can an active, mentally alert man stand it? He can sit on the front porch just so long but that soon palls on him. For a while his former pals may invite him into the usual weekend foursome, but more often it becomes necessary for them to fill out the game with business associates. Gradually he is forced to seek recreation and companionship among others in a like situation, if he can find them.

Even at that, those so pictured are far more fortunate than millions of others who, because of their employers' regulations or for other reasons, have had to undergo this radical change without having built up a competence sufficient for independence—one that would save them the humiliation of having to depend on others for their every requirement. For such a person, if totally devoid of inner resources, the future is black indeed. We all know men who have cracked up immediately under such conditions.

Certainly a large part of this gloom could be avoided by education and preparedness. Of course no one in his school days can visualize reaching the venerable age of 64 or Dr. Osler's dividing line of 40. Nevertheless, if the seeds were properly planted during that period and if they were nurtured during the long intermediate years, the age in question could become one of usefulness and happiness instead of dread and humiliation. This subject offers a fruitful field for study and action by our educators and psychologists.

In trying to solve this problem for myself, I am not exactly a neophyte. For years I have given it casual thought and have (*Continued on page* 648)

WHEN YOU RETIRE

THEN WHAT?

by WALTER WILLARD

Preparation for retirement should begin at school, writer says in his concluding article.

Photo by Eva Luoma

SWEET TOOTH

by

ROBERT G. KESEL

"WHY do my child's teeth decay so fast and what can I do to reduce the number of cavities? I feed him the right foods, try to see that he brushes his teeth every day, but he needs more fillings every time I bring him in. Isn't there anything I can do to stop it?" These questions are familiar to every dentist.

Dental enamel is the hardest tissue in the body and yet it melts away under an attack of dental caries or decay. The majority of scientists who are studying the cause of tooth decay believe that the hard covering of the tooth is slowly dissolved by the formation of acids on the tooth surface.

Such acids result from bacterial activity; this explains why cavities develop in sheltered areas—between the teeth, at the bottom of the pits and grooves in the biting surfaces, and along the gum line. It is in these protected areas that bacteria can securely attach themselves to the tooth surface and can live with a minimum of interference. Decay does not develop on prominent, well exposed surfaces that are continually cleaned by the movement of food over them in the chewing process. Studies have indicated that people who chew their food vigorously have less decay than do those who have a poorly developed chewing apparatus.

If bacteria are the direct cause, how do they produce the disease? Certainly not by chewing holes in the hard calcified tissue. Bacteria in carrying out their life cycle produce substances which in turn induce the occurrence of chemical reactions in the surrounding material. These chemical activators are known as enzymes. They are responsible for such changes as the souring of milk, fermentation of fruit, and putrefaction of meat.

Thus bacteria, living on the sheltered surface of a tooth, by enzymatic activity produce from the materials at hand something that can destroy the enamel. This something is acid, and it is developed in sufficient strength to disintegrate the hard tooth substance.

What raw material can there be on the tooth surface capable of conversion into acid of such strength? It must be contained in the diet and it must be worked into the decay-susceptible areas in chewing or drinking.

The only type of food taken into the mouth that can be changed into acid is carbohydrate—the sugars and starches. The more highly refined the carbohydrate the more readily is it turned into acid.

There is abundant evidence that food carbohydrates are associated with tooth decay. The ancient Egyptians noted that decay was more prevalent in people who consumed an abundance of sweetened

dates and figs. On this continent the Eskimo was practically free from decayed teeth until he tried the white man's diet. He liked carbohydrates—and with the acquisition of a sweet tooth his natural teeth began to deteriorate.

Today, along the coastline where the Eskimo has had ready access to civilization, teeth are reported to be in a deplorable condition. The native Eskimo diet formerly consisted mainly of fats and proteins; carbohydrates comprised only about 10 per cent. The diet now has been so modified that over 50 per cent of the calories consumed by the Eskimo are derived from carbohydrates when they are available.

Similar conditions have been found in other primitive people. As long as they consume the natural foods that grow in the territory in which they live they are relatively free of dental decay; but when they start to consume refined and processed foods dental trouble begins.

It was thought in the past that decay might result from a lack of something in the diet, such as vitamin D or C or calcium. But there is greater evidence that decay results not from a dietary deficiency but from an excess, and that excess is refined carbohydrates. Victims of war's malnutrition in prison, concentration camps and elsewhere show no increase in tooth decay. In fact, while gum disease became more pronounced, there has been less decay. A report from a famine-ridden province

versus SOUND TEETH

in India, where the diet was very poor according to our nutritional standards, and where the natives exhibited many signs of severe malnutrition, showed only one decayed tooth for every other child. Over 300 children were examined. Children of the same age in Rochester, New York, had 35 times as many decayed teeth as did the undernourished Hindu children.

Sugar consumption in the United States has increased tremendously. In the early eighteen hundreds the average amount of sugar consumed annually by each person was ten pounds. Now it is estimated to be approximately 125 pounds per person. The Department of Agriculture estimates that between 8 and 8½ million long tons of sugar will be consumed in the next year. This may seem like a large amount, but when we consider that three level teaspoons of sugar per day will amount to approximately fifteen pounds per year, and then contemplate the amount that goes into baking, preserving and sweetening foods, we can see how such an annual consumption is possible.

Some soft drinks contain as much as six teaspoons of sugar per bottle; this is sugar in concentrated form. The Department of Commerce recently reported that in ten months $520,000,000 wholesale was spent for candy to satisfy our national sweet tooth. The final retail cost at the candy counters was not available.

What the expenditure of this half a billion dollars has added to the cost of the future dental bill of this nation, along with the intangible price in toothache and ill health, is impossible to estimate.

There is good evidence that tooth decay can be reduced by cutting down on sugars and starches. Sugars are particularly dangerous; practically everyone can convert them into acid in the mouth whereas only about 10 per cent of the people can reduce starches all the way down to the acid state in the oral cavity. It is sometimes necessary to place the patient on a "diabetic" diet so that carbohydrates are practically eliminated for two or three weeks. The ban may then be relaxed and some carbohydrates permitted for another two or three weeks, after which the patient may return to a rather wide selection of carbohydrates without stimulating decay activity.

The prevention of dental caries by controlling the consumption of carbohydrates is extremely difficult because of the tremendous appetite that has been developed for them. They are palatable, economical, readily available and well advertised. Their restriction must come about through education and not legislation. Attempts at legislative measures are being contemplated in some areas, but legislative control of sugar consumption would be as unpopular and ineffective as the legal attempts to prohibit the use of alcoholic beverages.

We often hear and read the statement that sugar in its refined form is necessary to supply "quick energy." When we think of the rigorous lives that our ancestors who pioneered this nation were forced to endure we can marvel that they survived without a "lift" from candy bars and soft drinks.

Recognizing the obstacles in the way of curbing decay by dietary control, scientists are seeking other methods that may be more practical. There are several possibilities. One might be the elimination of acid-producing microbes from the bacterial population of the mouth, another the production of a tooth tissue less soluble in acid, a third the use of an "enzyme poison" in the oral cavity that would inactivate the bacterial enzymes responsible for carbohydrate fermentation, a fourth the neutralization of the acid before it attacks the tooth, and a fifth the removal of the carbohydrate from the tooth surface before it is converted into harmful acid. All of these possible avenues for (*Continued on page* 650)

WILL ROSS and

by J. ARTHUR MYERS
and
VIRGINIA L. DUSTIN

PART I

WHENEVER an adult is ill, one of his chief concerns is the restoration of working capacity. If he has funds, he does not care to exhaust them; if he is poor and ambitious he is not comfortable in accepting hospitalization and medical care from his taxpaying neighbors. He is desirous of supporting himself and accumulating some savings at the earliest possible moment. All of this is especially true when a chronic disease, particularly tuberculosis, attacks.

Rehabilitation of the tuberculous is not a new subject; indeed, it has been practiced for centuries and some of our finest contributors to all phases of human endeavor have rehabilitated themselves. Certainly, the great majority of persons with average mentality and ambition who have actually overcome tuberculosis have attempted to rehabilitate themselves and have been successful in most instances except, perhaps, during brief periods of industrial and financial depressions. An outstanding example, who not only rehabilitated himself but went on to aid others facing the same problem, is the subject of this sketch.

Remember the night you spent in the hospital having your tonsils out? Of course you do. You remember how the dark-haired interne reassured you as you slid gently down under the ether. And how next morning you seemed to be all neck, sore neck at that, and how thankful you were that you weren't a giraffe. Of course you remember. And the cool starched efficiency of the nurse as she made your bed, and the cool smooth bed, which never wrinkled or pulled out because the sheets were long and well-tucked in. Then, if you were observant, and of course you were, because everything was new and strange and interesting, you couldn't help noticing the labels on those nice smooth sheets, whereon was printed in neat red stitching, Will Ross, Inc. It was a compact, easy to say name, and seemed somehow to stand for quality and efficiency. You wished you had some sheets like that at home.

Perhaps your stay at the hospital was a longer one. Perhaps you had to wait for a broken leg to knit. Perhaps you went in because of tuberculosis and really got acquainted with the inside of the hospital or sanatorium until you were sure you could run it as easily as the manager, himself. In that case you saw the neat label more and more often—on the sheets, the pillow slips, the orderlies' jackets, the nurses' uniforms, the doctors' gowns, the thermometer case, the paper napkins at your elbow, until subconsciously, perhaps, it seemed as if Will Ross, Inc., had furnished most of the necessities and comforts of your immediate environment. You wondered about Will Ross, Inc. Was there a Will Ross, even, or was it just a trade name, maybe a famous personage dragged in from the past?

At 3100 West Center Street, Milwaukee, you will find the organization behind that label, one of the large hospital suppliers of the country. The friendly doorway to the three story brick building bears the simple inscription, Will Ross, Inc. Beyond that door lies a world of pleasant offices, great stock rooms with orderly aisles of steel racks piled with boxes and containers of merchandise, warehouses, and the shipping room where busy clerks pack supplies for shipment to the remote corners of the globe. Here, too, is the garment factory—a tailor shop for the men and women in white. In another factory yards of gauze and cotton are transformed into surgical dressings. Across the lake, in Michigan, another branch makes hospital furniture.

Behind every great enterprise lies a man and a story. And in the main offices of Will Ross, Inc., you will find the man responsible for this huge plant—a tall, handsome man well past the half-century mark. His brown hair is just touched with gray, he is alert, vital and radiantly healthy. He is 6 feet 3 and weighs 210 pounds. To see Will Ross today it is difficult to believe that he was once a patient with tuberculosis, for several years a wanderer in search of health, and for nearly five years in a sanatorium. That is one of the most interesting points in his history, for from that period, and from that sanatorium, stems the great business which he heads today.

Will Ross was born July 5, 1888, in Appleton, Wisconsin. When he was about a year old his parents moved into a house that had recently been vacated by a family in which there had been a death from tuberculosis. In fact, the victim had died only a few months before. The Ross family purchased some of the household effects, including several rugs, and Will spent his creeping and crawling days in the midst of furnishings which had been thoroughly exposed to tuberculosis germs. No effect of this exposure was apparent during his early years. He had a severe attack of pneumonia in junior high school; recovery was slow and some months afterwards he began having night sweats.

With high school finished, he went West to an outdoor job in the mountains of Washington where he spent seven or eight months on railroad construction. During this period he gained weight and apparently had made a complete recovery from what seemed to be the after-effects of pneumonia.

Returning to his home town in Wisconsin in the middle of the winter, he took a job that had been held by the now celebrated Edna Ferber as a cub reporter on one of the local newspapers. This newspaper had been housed for a great many years in the basement of an old building where it had picked

The rehabilitation of the TUBERCULOUS

up both tradition and dust. So far as he knew, there had never been any tuberculosis among its employees, but the quarters were crowded, hot, badly ventilated and, from the standpoint of close contact, a good breeding ground for tuberculosis.

That was over thirty-five years ago. In 1940, in a Wisconsin sanatorium there was a pressman in his late fifties who was employed on that same newspaper when Will Ross was. He has been taking treatment for five or six years. Likewise, another pressman from that same dusty, crowded basement plant succumbed to tuberculosis a few years ago.

Will Ross has no recollection that the working conditions struck him as being particularly bad. To the contrary, it was a "nice" place to work and he enjoyed it thoroughly, but between the ventilation, possibly, and the fact that a good deal of his day was spent trudging around picking up local news items, weather regardless, it wasn't long before he noticed an affinity for frequent colds, and not so long after that the night sweats returned, accompanied by loss of weight and other suspicious symptoms. When previous alarms had caused his mother to chase him off to the family doctor, he had been reasonably successful in lulling him into complacency and the examinations up to this time had consisted of a pat on the back and a prescription for a good tonic, which prescription was never filled.

With the return of symptoms, his mother took a radical position and insisted on going to a physician who did not know him so well. It took this doctor only a little while to prove, to his satisfaction at least, that tuberculosis was present. His advice was that Ross go to the Southwest and "take it easy."

It is a curious historic note that Ross was especially warned not to go to a tuberculosis sanatorium on the grounds that his case was an early one, and if he went to a sanatorium he might be further exposed.

He went to El Paso, Texas, and "took it easy." That consisted of doing little but sitting on the front porch of his boarding house and enjoying the sun. His room in a boarding house, which was the ultra-respectable sort, was obtained by subterfuge. When he got off the train in El Paso, he repaired immediately to a barbershop to be cleaned up from the results of the trip. Trains were not air-conditioned in those days and the trip across the desert, even as late as early October, was both hot and dusty. Being the talkative kind, the barber wanted to know if Ross was a resident of the town and Ross said he was.

"How long have you lived here?" the barber asked. Ross admitted it had only been about two hours and the barber allowed that he wasn't exactly a pioneer. The barber then proceeded to advise him on the pitfalls of the town and especially advised against having any contact with the people who hung around the Plaza in the heart of the city. "It's just full of those damn lungers," he said.

"Believe me," he went on, "we don't encourage them around here. They may come once, but when they get their bill, they never come again." Ross agreed that was the proper position to take for one who ran a first class barber shop, and they were getting along fine until right in the middle of the conversation Ross developed a coughing spell. Conversation lagged. When Ross got his bill he paid it meekly and never went back again.

When he went out to seek a place to live, he noticed for the first time that the majority of "want ads" advertising board and room wound up with some such formula as "no consumptives taken." For the first day or so of room-hunting, he answered in the affirmative when the question as to whether he was there for his health was asked, and had continuous refusals. Then he got smart and when he found a place he liked, he told the landlady, when she asked the usual question, that he had "stomach trouble." That was the Open Sesame and he moved right in without further comment.

A day or so later, while basking in the sun on the front porch, he saw a gentleman with a young boy arrive to interview the landlady. The gentleman was seeking accommodations for his family and stated that his wife was feeling a bit ill and so she had stayed down at the hotel. When asked if she was down for her health, he admitted she had a little stomach trouble. So she got in, too.

They brought her in on a stretcher in the far advanced stage of tuberculosis, but as long as she didn't admit it, it was quite all right. Tuberculous patients having to do a bit of coughing, Ross indulged himself at intervals and meeting the landlady on the stairway one day, she said, "I thought your trouble was stomach trouble!" Then she smiled knowingly and added, "Well, it's all right as long as you don't say anything about it."

The attitude toward the transient patient was decidedly realistic. If he (*Continued on page* 640)

IF THE cover on the street manhole rattles abominably every time traffic bounces over it, a complaint to the Board of Public Works or the community councilman is likely to "abate the nuisance." But how to abolish the noises in and around the home? These may include our children's healthy ebullience, as well as all the pesky squeaks of domestic machinery.

First let's consider the noises children make inside our four walls. And the most lovable youngster can make such a variety of sounds from the pounding on his crib up to the day when he "blasts" the radio!

Probably one of the essential things to remember is that noise to children means life, action, importance. It gets a response—even if we sometimes feel that Johnnie's trying to attract attention. As we analyze the noises that can make home a bedlam, we should at the same time be careful to avoid the "hush-hush" policy of the elderly or ill. That is a special condition, naturally.

When Johnnie slams a door, or Jean barks at her pet Spitz until he outdoes her, we must decide *why* the noise is made. There are almost as many reasons as there are noises. Johnnie may need simple, firm training in manners, or he may be upset by some conflict at school. When Jean barks at the dog—just for excitement—it may be pure thoughtlessness, or more likely a need of fresh air and outdoor exercise.

A great many noises contrived by children, either indoors or out, are experimental. Listen to children at play and sooner or later we'll hear them imitating sirens, doorbells, telephones, the clopping of horses on pavements, motors and even riveting, for they are almost as clever at mimicry as a radio sound technician.

One boy I know remarked, "I've composed a piece on the piano—do you want to hear it?"

Of course I did and when I asked the title of his composition, he hesitated but went on eagerly, "You see it's the bells that ring at school! They sound just like this!"

Not all children translate the impact of sounds in this noisy modern world as definitely as this. But some of what seems sheer noise is merely a confused reaction to environment. The high-strung child, who attends large schools, travels in heavy traffic or lives in a congested area needs days of quiet and relaxation just as surely as his office-tense parents.

A week-end in the country where he or she can make his or her own noise—outdoors, unchecked—is aid to both sleep and digestion. Moreover it's the cure for childish noises in a city apartment. Lacking the country outlet for "letting off steam," attending a dancing or gym class or learning some outdoor sport may help to soft pedal the noise at home.

Those noises that children are bound to try be-

NOISE ABATEMENT AT Home

by MARION BROWNFIELD

tween 1 and 5 years of age are usually experiment or boredom. Two simple cures are to give them something to do or to poke gentle fun at being a baby instead of a big girl.

Imitating animals is usually just an expression of interest, for love of pets is one of children's greatest interests. If Joan can't keep a pet, read stories about animals to her. It helps satisfy a very natural craving.

Some noise, just as with adults, is revolt against solitude. The child who trys to prolong the bedtime hour before being left alone may be comforted by the tick of a clock just as a lonely shepherd plays a flute to break the silence. The "only" child who lives with older adults is the one who mayhap bangs on every picket of a fence with a stick, to express his escape from the cage! So it behooves us to remember that to abate children's noises, we must substitute something suitable for normal expression.

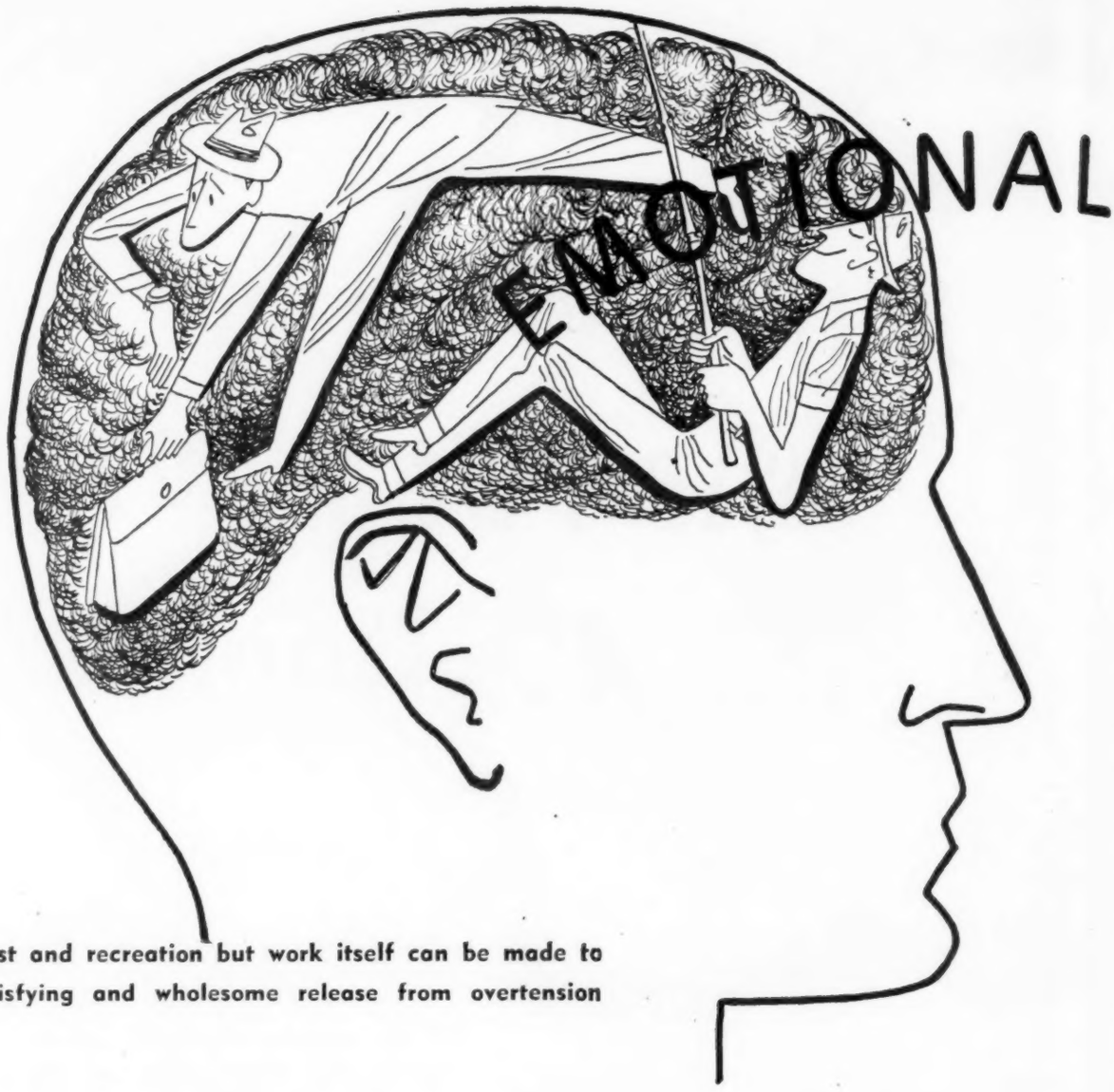
This does not mean that Bobby can keep up the irritating habit of performing a glissando on the piano keys every time he passes through the living room—just to make Grandpa rap his cane! Sometimes it's effective not to notice. Again it is worth while to let Bobby take piano lessons. Learning to play may be ear-taxing at first. But it can be limited to definite periods.

Some noises are merely a kind of play. Take the day, for example, that Bobby and the gang discover that tin cans held on their feet with strings make noisy clogs, and parade on the cement driveway. Or the "gang" discovers that the covers off the neighborhood garbage cans can be used as drums, beaten with sticks and provide fanfare for still noisier combat. This is outdoor noise to be sure, and temporary. But simple discipline and fairness to the neighbors requires that it be confined to Bobby's own back yard. Bobby and all children can be taught reciprocity—that allowing some quiet for the neighbors is the only way to expect peace in return.

We can indeed use such discretion ourselves with noises that children soon learn what is well bred. The slammed door, the wide-open motor, the vacuum cleaner used during a neighbor's sleeping hours are noises that we can abate, and thereby set the children a standard.

Pesky household squeaks must have attention. But haven't we seen children make a game out of a squeaky door? So give Jean or Johnnie the thrill of accomplishing something useful by letting them drop the oil and hear the squeak fade out.

And if we really do our part in "quieting" the home to reward the returning workers with blissful hours of peace—then perhaps they'll build the children a rumpus room. That is a real solution for indoor noise, whether in stormy weather or on gay and satisfying evenings at home for effervescent adolescents!



Not only rest and recreation but work itself can be made to offer a satisfying and wholesome release from overtension

WORK becomes satisfying when it is partly the result of the innate tendencies to create, to give or to offer to others. Where, even indirectly, it provides some expression for those tendencies, it no less than play has a share in easing tension and building "mental" health.

Some tension, varying to suit the occasion, sometimes even in emergency rising to high pitch, is wholly normal and may be accepted as "tone"—the healthy opposite of listlessness.

Throughout life a constant state of protective vigilance is maintained by the muscular tissues of our bodies. During health all muscular tissues are in a state of more or less tension, called tonus, and this is sustained, in varying degrees, continuously.

This tonus may be decreased temporarily by laughter or amusement or increased by sudden or unexpected criticism, loss of prestige or situations that threaten one's place in the sun of human affairs. Temporary relaxation occurs when these affronts are diminished, when hopes, desires and anticipations are realized, or when the satisfying rewards of living are obtained.

These neuromuscular tensional states are intimately associated and bound with feelings or emotions. The way one feels about himself or about others is often conveyed by a nonverbal language of acting, or by degrees of tension, a form of language that is a significant means of communication in all personal relationships.

States of overtension sometimes find expression through the medium of an unsatisfactory balance of work, food, rest or recreation and relaxation. They promote states of apprehension, discouragement, depression, discontent, feelings of inadequacy, insecurity and intolerance. When prolonged they may seek outlet in symptoms of bodily illness, ranging from persistent fatigue to spastic colon, mucous colitis and other states that are physically or socially disabling.

Perhaps all of us have known some overtension arising from a trivial or remediable condition of working or social life, or a failure to balance the necessary tensions of work with rest and recreation. Such causes, if they are clearly recognized, can readily be corrected.

HEALTH in Work and Play

by T. R. RETLAW

In persistent overtension, however, the immediate causes are often secondary to an inner conflict. In some cases these conflicts are so deeply rooted, perhaps in early experiences, that resolving or even unearthing them is a task beyond any but the psychiatrist, a physician specially trained and qualified in solving just such problems.

Sometimes, even when the causes are simple and obvious—even to the person affected—they involve some essential and inescapable factor in his life or constitution, and so cannot be eliminated. Then it is necessary to reappraise them clearly and coolly and seek to relegate them to a comfortably minor place in one's life by finding new and absorbing means of self expression. Not only here, but for each of the types of case described, work and play can offer appropriate aid.

The role of satisfying work involves many more factors than the process of earning a living. It includes the winning of personal recognition and a place among one's fellows. It carries with it a personal satisfaction in mastering difficulties and displaying skills. It creates also that personal joy derived from sustained performance and from participating with others in the rhythm and design of enterprise. When it expands and enriches one's experience, it brings emotional satisfaction and contentment extending far beyond the horizon of economic reward.

Positive emotional values seem necessary for most productive actions. Witness, for example, how much more freely and actively one may work under the influence of generous feelings, or when impelled by motives of friendship, patriotism or good will.

Routine work is characterized by an element of responsibility to others. It is a contract to be performed at the end of a specified time and carries with it the obligation of loyalty and self respect. Leisure, however, is characterized largely by responsibility to one's self alone, and by satisfactions which come from creative endeavor freely expressed. The deepest satisfactions of living are brought about through the application of individual effort, guided by an individual code of personal obligation.

Modern medicine is replete with examples of surprising improvements among disabled persons, even among those with serious structural damage, when smooth, satisfying outlets are made available for the expression of their limited energies.

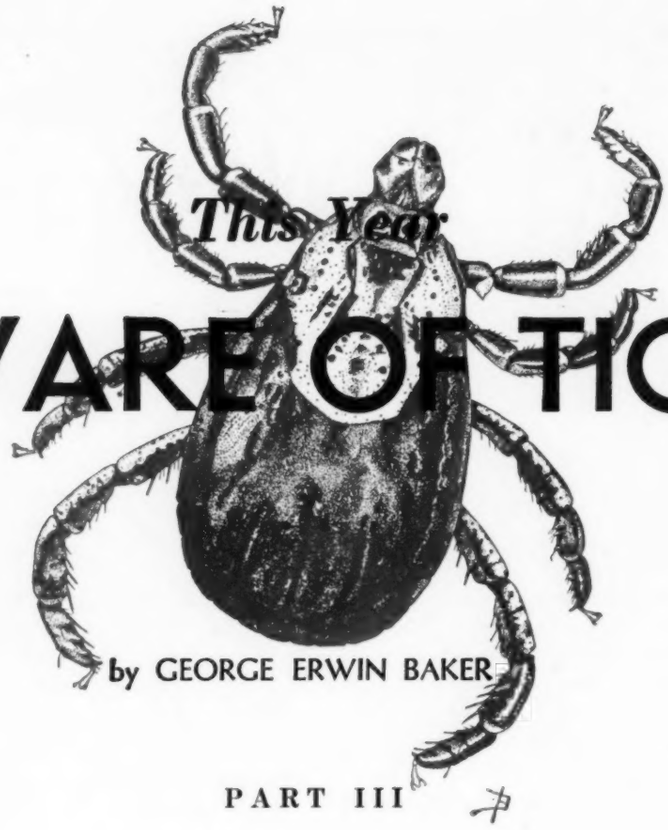
Only the exceptional person can devise occupation for himself, even when in sound health and under favorable circumstances. When handicapped by disease and by limited opportunities, absence of work tends to aggravate disability. The uneasy feeling of having nothing to do; of being a prisoner within one's self; of being shut off from opportunities to share activities with others; of resentment at interruptions or the miscarriage of a career which ambition and desire craved; of the tedium associated with the loss of the habitual routine of work; of the loss of the companionship of fellow workers, are all sources of discontent and emotional stress that hinder the joys of effective living.

Leisure is a responsibility to one's self alone. Its use has been called "the songs of freedom" or the "blossoming of one's desire," since free time so often means pleasure time. A life in action should not be made solely of routine work. Opportunities must be created for rest and relaxation in keeping with the rhythm of all life.

Perhaps in no other aspect of living are the motives and purposes of a person so frankly revealed as in the joys and pleasures of play. "As he plays so shall you know him." "See what man does; understand his motives; and mark the way in which he finds rest and relaxation; how then can he conceal his character?" Character, however, is most freely expressed in the role of play and in the uses of leisure.

Enlightened parents and teachers no longer believe that recreation and play are secondary or inferior processes in the molding of character. Play serves to awaken the creative and altruistic impulses innately present in man and may serve to produce, under appropriate supervision, the highest order of education and of ethical standards. The organization of a recreational program must give consideration to the individualistic aspects of play and should give competitive groups an equal chance to win.

In group play emphasis must be placed on the ideals involving victory for the group rather than individual success. (*Continued on page* 641)



This Year

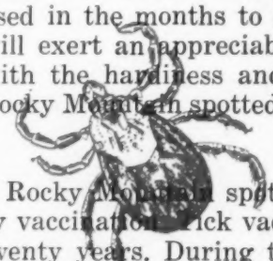
BEWARE OF TICKS!

by GEORGE ERWIN BAKER

PART III

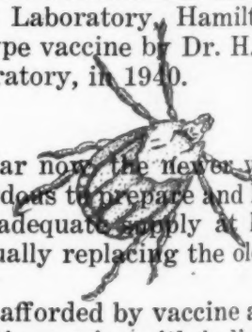
ROCKY Mountain spotted fever could be completely eradicated were it possible to dispose of carriers of the disease. The undertaking is too stupendous to contemplate. Conditions favorable to ticks exist throughout the United States in all localities where the disease is found. They allow hosts for both immature and adult forms to flourish in abundance. Vegetation and physical conditions exert an indirect influence, because they afford suitable surroundings for animals serving as tick hosts. Once established in a locality, ticks continue to thrive if a sufficient number of wild or domestic animals are present.

Various means have been resorted to in order to eliminate tick carriers, rodents and environmental factors which serve to perpetuate the disease. Most have never passed the experimental stage; they have not yet proved practical as a means of reducing incidence of infection. The new insecticide, DDT, and the newer rodent killer, 1080, will be extensively used in the months to come. Whether or not they will exert an appreciable effect on a disease state with the hardiness and geographic magnitude of Rocky Mountain spotted fever remains to be seen.



Rocky Mountain spotted fever can be prevented by vaccination. Tick vaccine has been available for twenty years. During that time, several thousand residents of the United States and Canada have been protected, many of them annually for years. Since not everyone who has been vaccinated has been exposed to infection, it can never be estimated how many illnesses have been avoided and lives saved by use of the material. Although the discovery of vaccine for Rocky Mountain spotted fever has never been given the wide publicity received by many other medical contributions, persons who have benefited from its administration are certain that it is one of the profession's most worthwhile contributions to the health and safety of the American people.

Vaccine is available in two types. Tick tissue type vaccine was perfected in 1925 by Drs. R. R. Spencer and R. R. Parker of the United States Public Health Service's Rocky Mountain Laboratory, Hamilton, Mont., and chick embryo type vaccine by Dr. H. R. Cox, then of the same laboratory, in 1940.



Although both are popular now, the newer vaccine is easier and less hazardous to prepare and has solved the problem of an adequate supply at low cost. As a result, it is gradually replacing the older type.

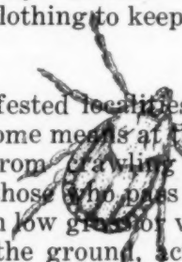
The degree of protection afforded by vaccine and the duration of such protection varies with individuals and the severity of infection to which they are exposed. As a rule, those vaccinated in the spring of the year are fairly well protected for at least the remainder of that year. There is excellent protection against relatively mild forms of the disease, but the degree of protection is progressively less as severity of the exposure increases. Nevertheless, against even the more serious forms of tick fever, it is usually sufficient to insure ultimate recovery. It is an established observation that most vaccinated individuals who develop the illness have it in much milder form than would otherwise be the case.

It is probable that a certain proportion of vaccinated persons carry some immunity into the second year. The protection appears to be greater in those who have been vaccinated for two or more successive years. Evidence does not indicate that any

considerable amount is carried into the third year. In order to afford the greatest protection possible, it is recommended that vaccination be undergone each year. The person subject to exposure who makes annual immunization a matter of routine is assured that everything known to medical science has been done to safeguard his welfare, and that he has been rendered as secure as possible against a serious disease, one that might terminate his life had he not been vaccinated.

At the present at least, exposure to Rocky Mountain spotted fever is not general enough to make vaccination necessary except where hazards of residence, work or recreation demand. Nevertheless, all those whose business or pleasure takes them into localities where ticks are encountered in appreciable numbers should strongly consider the advisability of being vaccinated. One of the most serious phases of the tick fever problem is that new areas of infection are being uncovered each year. Failure of the disease appear in regions where ticks are found in abundance is no guarantee that the same favorable situation will be prolonged indefinitely.

Prevention of exposure to infection with Rocky Mountain spotted fever is accomplished only by remaining out of localities where ticks are numerous. Such precautions are not always possible or feasible. There is no satisfactory material which can be placed on the body or clothing to keep ticks off.

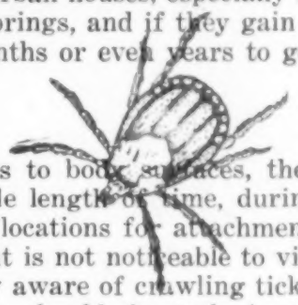


Persons entering infested localities should wear trousers gathered by some means at the bottoms, in order to halt ticks from crawling up the legs. Ticks do not jump on those who pass their vantage points but lie in wait on low grass or vegegation not over 18 inches above the ground, actively moving their numerous rough legs with which they seek to cling to objects that brush by. Clothing should have a minimum of seams and openings, and must be gathered snugly at the wrists in order to prevent their ingress to body surfaces. Smooth clothing prevents ticks from gaining footholds, but cloth with a rough nap impedes their progress. A hat or cap should be worn to prevent their attachment on the scalp. It is a good plan while in tick-infested localities to pass the hand occasionally over the back of the neck in order to detect crawling ticks. They may gain access to the body by working themselves beneath the collar.

Clothing should be removed at least two or three times a day and the body thoroughly examined for the presence of crawling or attached ticks. Since they hide in body folds, crevices or hairy portions free from rubbing, a diligent search must be conducted. Camps should be placed where rodents are few, preferably in places where no low grass, sagebrush or small bushes are growing. Wooded areas along creek banks are best avoided, as are the vicinities of old trails and roads. Ideal camping spots are usually where standing timber is present with a minimum of low vegetation.

Persons must again inspect their bodies, clothing and bedding before retiring for the night in the open. The precaution is most important when two persons sleep in close proximity because infectious ticks may attach themselves to both persons successively. While in tick-infested localities it is unwise to leave bedding spread on the ground during the day. It attracts ticks, often from a considerable distance.

After return from trips, clothes and bedding should be carefully gone over, aired and then removed to buildings not used for human habitation. Once ticks have taken up their abode, eradication is apt to prove most difficult and uncertain. Frequently pets carry them into suburban houses, especially in unusually warm, damp springs, and if they gain a foothold, it may take months or even years to get rid of them.



When ticks gain access to body surfaces, they move about for a variable length of time, during which they seek suitable locations for attachment. The process of attachment is not noticeable to victims, nor are they usually aware of crawling ticks. Sources of minor irritation should always be investigated. It is supposed that carriers of the disease are not actively infectious until several hours have elapsed, but little reliance can be placed in this contention.

Prompt removal of ticks has undoubtedly prevented many infections of Rocky Mountain spotted fever.

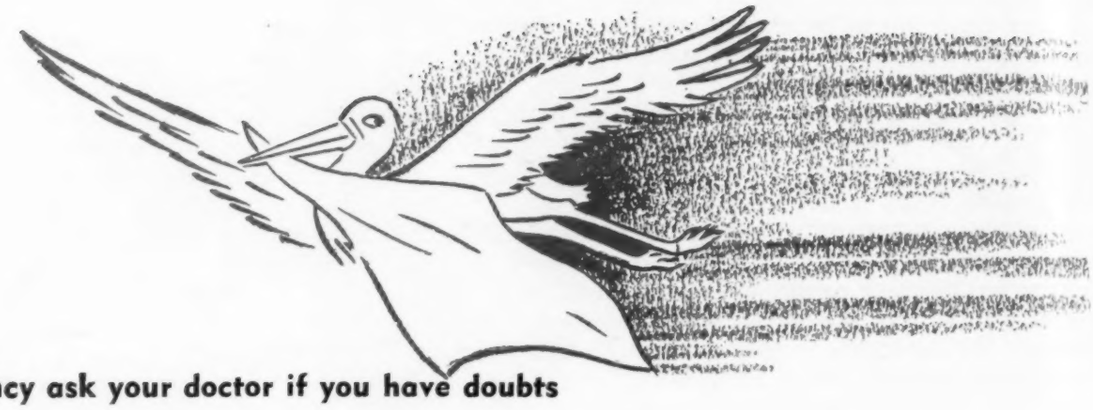
As a rule the head of the tick is embedded beneath the surface of the skin, the body remaining free and protruding at an angle from it. The head is held firmly in place by mouth parts, so that hasty or careless plucking often removes the body alone, leaving the remainder in place to serve as a potential source of infection.

A gentle pull may be successful in removing the tick. Close inspection then reveals it to be intact, often with a small fragment of skin caught in the mouth parts. Failing in the procedure, a small piece of skin in which the tick's head lies embedded may be elevated with a pair of tweezers and a tent-like wedge of tissue snipped with a fine pair of scissors. The point of a needle can be carefully inserted from one side beneath the tick's head and removal effected by turning the point sharply upward. Either maneuver is accomplished in a matter of seconds and insures complete removal.

Wounds from tick extraction should always be thoroughly touched with one of the numerous excellent germicidal agents now on the market. These may be introduced into attachment sites by means of a pointed toothpick.

Extreme caution must always be observed not to crush ticks. If the accident occurs, the discharged contents should be thoroughly washed from the hands by soap and water, care being exercised not to irritate the skin. When an antiseptic solution is available, thorough rinsing of the recently cleansed hands gives additional protection against possible infection.

At the present writing, (*Continued on page* 643)



During pregnancy ask your doctor if you have doubts about anything. He has the answers to your queries.

OBSTETRICIANS would no doubt be much happier if every woman who has had a baby and all those who know somebody who had a baby would cease the practice of obstetrics. Well-meaning friends and relatives love to tell the harrowing, exaggerated details of Jane Doe's nausea, Cousin Millie's long labor and Aunt Essie's Cesarean. Most physicians give their patients a list of instructions, warnings and do's and dont's after they have completed a thorough examination of the patient and have listened to a complete medical history of the patient herself. One doctor ends his list of instructions with this advice: "Please do not accept advice from friends and relatives, however well intended. I cannot be responsible for your well-being unless you follow my instructions exactly."

The obstetrician's rules for maternal clothing are few and not concerned with appearance. "Comfortable clothing that hangs from the shoulders and does not bind the waist, low-heeled shoes, no round garters, an uplift brassiere." For the first few months of pregnancy regular clothes can be worn. However, the day arrives when buttons will not button and zippers will not zip. Purchasers of maternity wardrobes should plan for the type of weather in which they will be worn during the later months of pregnancy.

Clothing should fit one's needs and activities. Since the great baby-boom began a few years ago, the maternity dress has emerged from the mother-hubbard, burlap bag stage of design. It is now possible to purchase slack suits, dressmaker suits, sport suits, house dresses, cocktail dresses and evening dresses. Suits are usually the best buy, as one suit, with different blouses, dickies, scarfs or an interchangeable jacket, can be used more often than one or two dresses. There do not seem to be any blouses made that are specifically for maternity wear; so most pregnant women find that during the later months the only blouses they can wear are those that button down the back, and these usually must be worn with the bottom buttons open.

A certain amount of lingerie is manufactured for the pregnant woman. Maternity slips are wrap-around affairs, with buttons that allow for expansion. These buttons are placed in the most unreachable sections, and it is generally necessary to button the slip before putting it on or to have someone else button it. As in the case of blouses, I do not think that maternity nightgowns are manufactured. One can purchase nightgowns made in the yolk style worn in the nineteenth century or one can buy nightgowns in large sizes. Finally, if the supply allows, one can borrow her husband's pajama tops and wear those.

Practically all the brassieres made are of the uplift type, and unless one has been wearing exceptionally tight bras the ones in use at present can be used all through pregnancy. However, as the lower half of the body develops many women find that sewing ruffles on their bras keeps the appearance of normal proportions.

Ballerinas and pregnant women are forbidden to wear round garters. The manufacturers have taken this ultimatum from the obstetrician to their hearts. They have designed everything from suspenders and panty-waists to corsets and panty girdles. The corsets and girdles have the added feature of supporting the weight of the baby and the back. They are designed for comfort and support, not for any type of streamlining. The maternity corset is, in appearance, similar to a suit of armor with hooks, laces and straps. Most obstetricians advise women who must stay on their feet a large part of the time to wear these corsets.

Even though the list of rules and regulations prescribes low heels, high heels are worn occasionally. For walking any distance or doing any amount of footwork, most women prefer lower heels; for evenings at bridge or the movies women generally wear

Streamlined Motherhood

by MARJORIE F. MARKS

high heels. The danger in wearing high-heeled shoes lies mainly in a pregnant woman falling, stumbling and tripping. Though the change of balance and center of gravity caused by high heels is not great normally, during pregnancy the change necessitated by the added weight causes many women to walk unsteadily in high-heeled shoes. This is also true of the wedge and platform shoes and to ill-fitted sling-back pumps.

Superstitions about pregnancy probably date back to the Cro-Magnon man's ancestors. Some people still insist on serving their pregnant friends second helpings of food, loudly stating "My dear, you must remember you are eating for two now." No baby could possibly need the amount of any second helping eaten by the prospective mother. In fact, newly born babies rarely take as much as four ounces at any feeding. Therefore, all the "eating for two" a pregnant woman does really results in her gaining two pounds instead of one.

Then there are cravings—pickles, oysters, candy, fruit, onions. At some time or other one hears how Uncle Sylvester went out in January into the teeth of a storm to find strawberries for his pregnant wife. There is the story of how he could not find them, and so the baby, poor cousin Veronica, has a strawberry mark on her left hip.

Nothing the pregnant woman thinks, eats or does not eat will mark her baby physically or make it a mental giant, full of pleasant thoughts or great music. Most pregnant women do have cravings, and in general most women have cravings, pregnant or not. In this day of frozen foods, Uncle Sylvester could have obtained strawberries for his wife in January or, for that matter, oysters in May had she so desired.

A pregnant woman is not a Dresden doll. In the past she was expected to vegetate for the complete nine months. Now, most doctors permit a certain amount of golf and swimming in the early months and strongly recommend an hour of walking outside every day. When most of the pregnancy falls in the winter months, there usually is not much desire to walk for an hour outside. As exercise, housework seems to be a good substitute. There is a superstition that the day before labor starts, the pregnant woman is often filled with boundless energy and waxes floors, mows the lawns, weeds the garden and perhaps washes walls. Any of these activities could start labor, but that seems to be overlooked.

The obstetrician generally advises a nap during the day, or at least to rest with the feet elevated. If it is not possible to rest for a full hour or two, the tip from the Army of a ten minute break is suggested. During the later months many women find it increasingly difficult to find any position comfortable for sleeping. It is impossible to sleep on the stomach, but many women find that putting a pillow under the stomach when sleeping on the side does make things a bit more comfortable.

All doctors have pet lists of what should be taken to the hospital. They all suggest gowns and baby clothing but seem to forget books, toilet articles, stationery, pen and nursing bras, and never mention clothing for the now flat figure that will leave the hospital. Do not expect to wear a tight dress, for it usually takes a few weeks for the figure to regain its normal shape and size. Most women find that either bed jackets or just pajama tops are more comfortable than nightgowns in the hospital. Gowns twist, bunch and pull and pajama pants are rather inconvenient. Since the last day in the hospital is usually spent out of bed the new mother will want a gown or pajamas and a housecoat and slippers. While in the hospital a person should write as many notes as she can, for once she is home it will take a while to fit letter-writing into the schedule.

The prospective mother should ask her doctor when she has doubts about anything. He knows answers to all the questions, and if there are any warning signals of trouble he will want to know about them as early as possible. If his instructions are followed to the letter a mother-to-be will have a far happier pregnancy.

by RUTH A. THOMAS

The why and how

THE story of the role of immunization in the fight against disease is marked by a series of dramatic episodes, beginning with the discovery by Jenner, more than one hundred and fifty years ago, that vaccination with a minute amount of cowpox virus would protect against the dreaded and disfiguring plague, smallpox. But the soldier, chaffing under the number of "shots" required before going overseas, probably had little realization that each inoculation represented a milestone in medical research and that the army, because of them, was to enjoy freedom from the outbreaks of typhoid fever, typhus and influenza that have taken their toll from armies in the past. Not only have we developed products for the control and treatment of an increasingly large number of communicable diseases since Jenner's time, but we have furthered our knowledge of the complex biological and chemical processes involved.

While the learned scientists are arguing among themselves about the relative merits of the various products, or of different technics for administration, Mr. and Mrs. Citizen have become increasingly confused by the complexity of the terms employed. Why does the doctor use what he calls a vaccine when immunizing Johnny against smallpox and a toxoid against diphtheria? And again, when Mary steps on a rusty nail, why does he inject an antitoxin to ward off lockjaw? Then, as though three terms synonymous with protection were not enough, recent research has introduced another, immune or gamma globulin, that is advocated for the modification of or, in some cases, the prevention of measles. It is little wonder that we become discouraged in trying to interpret what appears to be a confused medical jargon and that many of us erroneously use the term serum as applicable to all. An understanding of the fundamental principles involved, however, may help us to fit the proper names to the array of biologic products that have been developed for the control of communicable disease.

Most of us are familiar with the fact that the communicable disease are caused by minute microorganisms that are so small that they can be seen only with the aid of a powerful microscope. The majority are bacteria or the even smaller virus forms, although, particularly in the tropics, we may encounter disease-producing yeasts, molds and microscopic animal parasites. Each organism invades the tissues and, becoming established there, produces a chain of reactions that we recognize as the characteristic symptoms of the disease. We say that we have become infected with a certain organism, but let us remember that infection does not necessarily mean clinical disease. Technically, the term merely implies that a virus or bacterium has gained access to our tissues. Whether or not it produces any harmful effects there depends not only upon its virulence or ability to elaborate its poisons, but upon the fight that our body cells put up against it. The host cells become the site of a struggle that may be as fiercely contested as the battles for Britain or for the Philippines. And as in any war, victory belongs to the side with the most effective weapons for invasion or for defense.

Various bacteria and viruses have distinctive characteristics—just as you and I—that can be recognized by the trained bacteriologist. They may differ in size, shape or other morphological features, or require special food substances or temperatures for growth, or vary in their physico-chemical composition. However, from the standpoint of disease production, we are primarily interested in their characteristic methods of attack and the portals through which they habitually gain entrance to our bodies. Some are highly invasive while others are highly toxic; some incite a local inflammatory reaction while others elicit an acute generalized response. In some diseases, as measles, diphtheria, scarlet fever and whooping cough, the organisms get in through the upper respiratory tract while in others, as typhoid fever and dysentery, they gain entrance by the digestive route. Each species displays characteristics that are more or less typical, but just as human beings may differ in individual prowess though conforming to recognized familial or racial traits, so the ability of individual strains of bacteria to wage war against man may differ and may be measured in terms of virulence.

Most disease-producing bacteria form substances that are destructive to body cells. If these poisons are intimately bound up with the bacterial cells they are referred to as endotoxins. If they diffuse away from the bacterial cells and are carried to distant tissues by the blood, they are known as exotoxins. The organism causing diphtheria is a prominent member of this latter group. It grows on the mucous membranes of the throat, and although it may cause

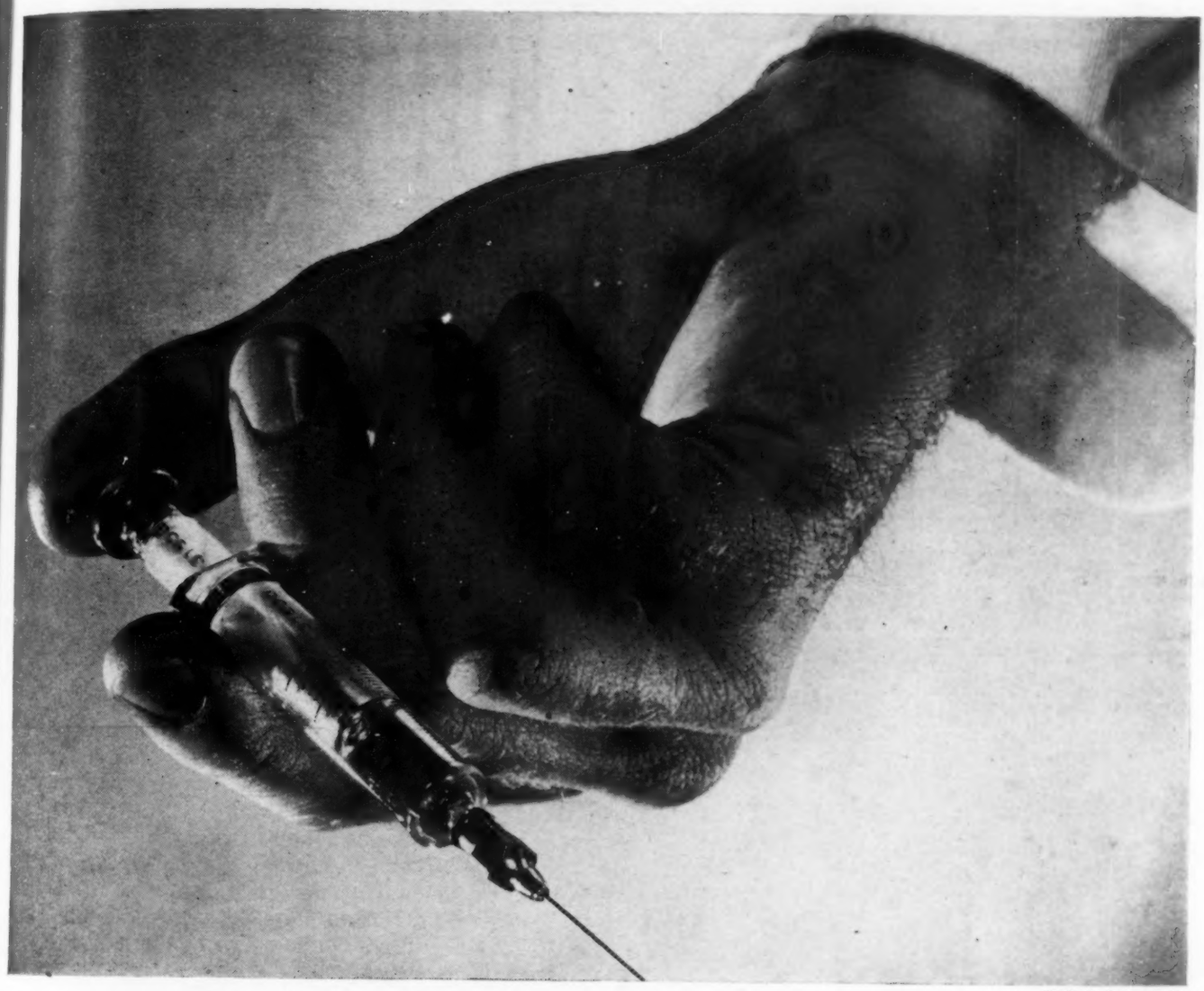


Photo A. Devaney, Inc.

# of IMMUNIZATION

local distress and difficulty in breathing, its most destructive effects are recorded in injury to the distant heart muscle.

Fortunately for us, our tissues do not go into the fight unarmed. The army, navy and air force of our body cells are represented by cellular and chemical lines of defense. The healthy, unbroken skin and mucous membranes constitute our Maginot line,—our outermost barrier against invasion. If this holds, well and good, but there are weak spots that are difficult to defend when the invading army or the dose of organisms is large. Having penetrated this barrier, the bacteria may be overcome by phagocytic cells that are found in the circulating blood and in certain tissues that engulf and destroy them. Or they may encounter one or more of the protective substances of a chemical nature which neutralize their poisonous effects and to which we give the name, antibodies.

Depending upon the interacting forces of virulence and host resistance, the individual may or may not develop clinically recognizable disease. If he possesses the appropriate antibodies in his blood, he is able to withstand the assault of the micro-organism and is said to be resistant or immune. However, there may be intermediate grades of severity of infection. We are all familiar with the case that is so mild that it is difficult to establish a diagnosis: Mary's sore throat was so slight that no one thought of scarlet fever until her brother developed a full-blown rash, or Johnny showed only a vague, transient fever while his brother had a typical case of measles. Although immunity implies victory it does not necessarily mean that (*Continued on page* 632)

HOME SAFETY

For Babies and Preschool Children

by DOROTHY OPPENHEIM

Acme Photo

The nurse is showing how a new electric instrument, like a mine detector, helps find safety pins lodged in throat or chest

THE best way to prevent any accident is to know about it before it happens, and simply see that it doesn't happen. Fortunately, every normal baby grows up in approximately the same way, and you can more or less count on certain things happening to him in a certain order. By knowing in advance how a baby will grow and develop, we also know in advance what hazards these changes will bring. The trick then, is to keep one step ahead of the baby—and always clear his path of dangers beforehand.

It goes without saying that no baby, or young child, can do very much on his own to keep himself safe from accidents. He doesn't know what danger is. He'll play with matches as if they were toys, and think nothing of touching a hot pan on the stove. Nor would he realize the consequences of wriggling from his mother's grasp and sliding under water when he's in the bathtub.

Since a baby can do nothing to protect himself, the whole job of keeping him free from harm naturally falls on his parents. And the more they know about the changes which will take place in their baby, as the months go by, the safer "growing up" will be for him. I'm not saying that to be a good parent you have to know highly scientific facts on infant development, nor have to read profound psychological studies on baby behavior. All you should do is to take into account the things that are common knowledge about babies—things that anyone who has ever had a baby in the family is likely to know.

There's probably no one who doesn't know, for example, that the newborn baby is going to spend most of his time in bed. Follow that one step further, and it's plain that his greatest chance of accidents will be while he's asleep. What would be likely to happen to a helpless baby in bed? Perhaps he might get tangled in his blankets, or slide down under them, or somehow pull them up over his face. If any of these things happen, the baby may suffocate. Or he may somehow get his head underneath the pillow, with the same result. Or if he's sleeping in the bed with someone else, the other person might roll on him and smother him.

With a little foresight and common sense, though, any parent can make sure that none of these things happen to his baby. First of all, the baby's blankets should be fastened securely with safety pins or clasps—at a level no higher than the baby's chin—so that there's no chance that he might be tangled in them, or that they might cover his face and stop him from breathing. No baby should ever use a pillow—he doesn't need one for comfort and there's always a chance that he may be smothered by it. As for suffocating a baby by sleeping in the same bed with him, that can never happen if the baby always sleeps alone—and he always should. It's better to improvise a baby's bed out of a clothesbasket or a dresser drawer than to (*Continued on page* 630)

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Home Safety for Babies and Preschool Children

(*Continued from page* 628)

invite disaster by making the baby "double up" with some member of the family.

Of course, the day will come when the baby won't be content to lie helplessly in his bed, but will suddenly discover that he's the master of such skills as rolling over, or getting to the edge of the bed. When he starts to roll, there's nothing to warn him that he should stop short when he reaches the edge—he has no idea that if he rolls far enough, and the bed has no "sides" to restrain him, he'll tumble out and take a hard fall. It's up to his mother to see the danger for him, and to prevent the accident from happening. The way to do that is to be "ready" for the mishap beforehand.

That means when the baby looks as if he's ready to begin turning himself over at will, she should already have provided for his safety by making sure his crib has sides, and that the sides are kept up at all times. True, that does mean that the baby has to be closely watched for signs of a change, but isn't it better to spend a little time in vigilance than in nursing his painful bumps and bruises?

When the baby starts to creep, a whole set of new problems arises. And here again, the more the mother foresees, the better for her baby. A slippery floor covered with a couple of small scatter rugs has upset many an adult, so it's plain that no baby can be expected to navigate his way across such a room. There's small chance of talking most people out of waxing their floors to a high shine, even for the safety of their baby, but at least, all the wax should be rubbed in thoroughly. When slippery spots of excess wax are left on the floor, they are sure to create bumps for the baby.

There is a way to have small rugs on your floors, without having them "scatter" in all directions when they're walked on, and slide out from under you in the process. They can be anchored to the floor, with some practical devices you can prepare in your own home, or buy at most department stores. Old rubber jar rings that have been discarded make rugs skid-proof when they're sewn to the under edges of the rugs. Oil cloth is an excellent nonslip material too, if it's attached to a rug, with the shiny side down.

Splintery floors and sharp-edged furniture are other hazards which can cause harm to a baby as he crawls about on all fours—and both of them should be acted on before the baby starts crawling. Electric cords stretched from a lamp on one side of the room to a socket on the other are real "booby traps." Not only might the baby trip over them, but he might find them interesting playthings. He hasn't the slightest notion that a fatal shock might be the reward for his curiosity.

To banish any such danger, all lamps should be placed as close as possible to wall sockets so that there's little chance of anyone stumbling over them. If a cord is long, the excess should be coiled, and held in place with a rubber band. If cords must stretch across a room, they should, if possible, be put behind a piece of furniture, and thus kept out of the family's way.

The best way to keep a baby from crawling into trouble is to have a playpen for him. The expense of buying a new one shouldn't deter anyone, because secondhand ones can usually be had. And a playpen can be made at home at no cost at all by taking four kitchen chairs and laying them on their ends to form a square. Put a baby in a playpen and give him a few toys, and you can feel pretty sure that he's as safe as he possibly could be.

When it comes to choosing toys for baby, one thing to be sure is that they are safer playthings than an electric cord. Many baby's toys definitely aren't . . . those colored with poisonous paints, for example, or those made with small removable parts which the baby may chew and perhaps choke on.

Anybody who has ever watched a baby knows that the first thing he will do to any toy he has is to thrust it into his mouth. That's his way of seeing whether he likes it. Every mother should be aware in advance that her baby is going to do this—and meet the situation by providing toys that are sure to cause him no harm.

Toys bought for a baby should have rounded corners, and smoother edges, and be too big to swallow. They should be all in one piece, without any small removable bells or whistles or anything else that can come out and be swallowed. Dolls with eyes made of pins or thumbtacks may be dangerous for the baby since he may pull out the eyes and start to chew on them.

Before any painted toys are bought, the paint used should be known to be harmless to babies. Buying rubber or bone toys instead can, of course, remove any worry about poisonous paint. Beans, buttons, coins, marbles or any other small objects should be kept far out of the baby's way. If left where the baby can play with them, he is sure to pop them into his mouth. Doctors who have retrieved everything from safety pins to bright new nickels from babies' lungs know this tendency too well.

These suggestions about toys apply not only to young babies but to the toddler-class as well. Here, though, the main problem is not only that the child will swallow his toys, but cut himself on sharp-edged fire engines or mechanical toys. Not that a child should be deprived of a fire engine, but the one bought should be chosen because it's likely to cause the fewest scratches.

Before we started to talk about toys, we had left the baby at the creeping stage. Sooner or later after that, of course, he's going to start to walk. Few grownups can remember all the tumbles they took in the days of their first faltering steps. And in consequence many of them expect too much of their children and too quickly. Babies don't learn to walk in a hurry—it's a long slow process—with plenty of bumps and tumbles along the way. These are all part of a "day's work" for the baby and should not be treated as accidents—unless of course the child really hurts himself.

When a baby has mastered the trick of walking, and toddles around the house at will, he's probably headed for the home's two major danger zones—though of course he doesn't know it. I mean the kitchen and bathroom—the two rooms where he stands the most chance of getting hurt. A mother who foresees the hazards in these rooms and does something about them, may actually be saving her baby's life.

The list of accidents which may befall a baby in the kitchen is long. He may wander in while his mother is occupied elsewhere, grab the handle of a shiny pot on the stove, and pour its boiling contents over himself. Or he may tinker with the wires of the electric toaster or iron, or reach for a sharp knife on the table. Or perhaps he will spy a box of matches and start playing with them. If his mother has wisely prepared for these possibilities ahead of time, she has made a habit of turning all pot handles in so that the baby can't reach them as readily; she's put all electric appliances and sharp utensils out of the baby's way; and she also keeps matches far beyond his reach. Besides she never leaves the baby alone in the kitchen, not even for a few minutes.

The bathroom is another place where no baby or young child should be left alone—because the first thing he is likely to do when he's on his own in there is to climb up to the medicine cabinet and inspect the bottles and boxes. He may even sample some pink or yellow pills, thinking that they are candy, or he may think the iodine good to drink.

How can you make sure that this doesn't happen? Simply by putting a lock on the medicine cabinet and keeping it looked. The key should be left in a place known only to the grownups in the family. If it's difficult to put a lock on the cabinet, a

medicines that are poisonous when swallowed should be kept on the highest shelf.

Some parents are conscientious about clearing their baby's path of hazards and dangers; but they slip out of these habits and rely on words alone, when the baby has grown into a little boy or girl. They warn the child that he'll hurt himself if he does this or that, and they think that does the trick. They don't realize that their responsibility lies deeper than mere talking, with a child in the toddler or runabout stage, as well as with the young baby. Don'ts should be used sparingly, or better still not at all.

Until a child is ready for school, the task of protecting him from accidents is not his affair at all—it's entirely up to his parents. They owe it to him to do their job well.

AID FOR "SPASTICS"

Formation of the American Academy for Cerebral Palsy to set up standards of personnel training and serve as a clearing house of information important to physicians has been announced in a letter to the *Journal of the American Medical Association.*

Charter members are a group of physicians who serve the National Society for Crippled Children and Adults as a medical advisory council in its national cerebral palsy program. The new professional agency was set up, the *Journal* letter explained, "because there is currently a tremendous interest and a demand for services which are nonexistent. Trained personnel is desperately needed, and at present there are no standards for the training of such personnel."

Growing interest is indicated by the fact that the universities af California and Wichita offered special courses this summer in that and related fields, as reported in the *Spastic Review.*

IT TAKES ALL THREE

Admiral Joel T. Boone, who conducted the recent Medical Survey of the Bituminous Coal Industry, said it disclosed serious problems "of improving the health of the miner, assuring him of better living conditions, enabling him to provide for his family through his own initiative and efforts, and making him a more responsive and responsible citizen of his community."

But, he added, it showed that those problems are solvable "if labor, management and the medical profession cooperate and work conjointly with a united interest and sincere devotion to a common cause—the good of large numbers of people and a basic industry."

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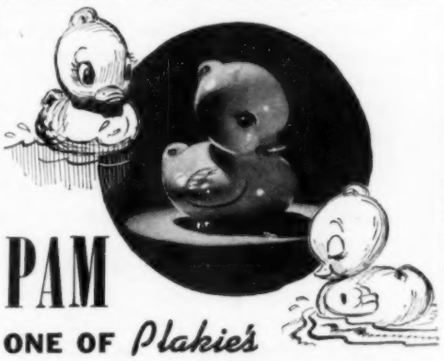

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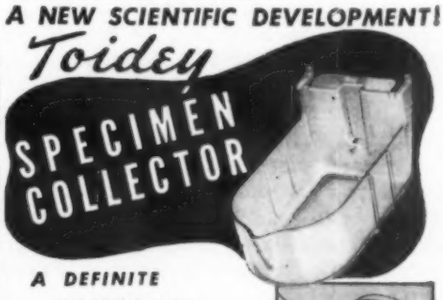

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The Why and How of Immunization

(*Continued from page 627*)

the invading army has been wiped out, that the virulent organizisms localized on our epithelial tissues have been destroyed. Individuals may harbor diphtheria organisms in their throats or typhoid organisms in their intestinal tracts and yet, because of their immunity, remain perfectly well. The organisms are powerless to do such individuals any harm, but when passed on to susceptible friends or casual contacts, they promptly begin to cause trouble. These resistant individuals are known as carriers. They are responsible for the spread of many of the communicable diseases, particularly diphtheria, streptococcus throat infections, and the epidemic form of meningitis and, because they are seldom recognized, complicate the problem of control. Closed spaces in which the ventilation is poor are the happy hunting grounds of these carrier-bred organisms that easily jump the gap, by way of the invisible respiratory droplets, from the carrier to his neighbor.

The activities of the unsuspicious intestinal carrier in the transmission of disease may be curtailed by imposing barriers across the pathway—by applying such common practices as personal cleanliness and sanitation, particularly with reference to food, milk and water. However, although personal cleanliness is undoubtedly an important factor in reducing the spread of infection, we will not be able to stop this wholesale interchange of respiratory bacteria and viruses until we have devised methods for purifying the air of all rooms where crowds are apt to gather, from the home of the popular hostess to the snack bar dispensing ice cream cones and hamburgers with an appeal to after-school appetities.

As a step toward the control of carrier transmission, the doctor usually takes cultures from the nose and throats of the people who have been in contact with diseased individuals. Moreover, some individuals continue to give off causative organisms in convalescence and even after complete recovery. For this reason, the doctor will not permit Aunt Jane, who is just getting well after an attack of typhoid fever, or Billy, who is over his diphtheria and anxious to be out with the boys, to mingle freely with others until a series of cultures have been taken and reported free from virulent organisms.

It is little wonder that we are so anxious to employ every possible means of increasing resistance to infection. The maintenance of the mucous membranes in a normally healthy condition may help but the development of immunity is the only measure that will guarantee any degree of success. Immunity is associated with the presence of antibodies in the blood that neutralize the invasive or toxic properties of particular bacteria or virus forms. These antibodies are complex chemical substances that are produced by the host cells in the response to the proteins, either of the parasite cells or of their toxins, and are known to the microbe hunters as "antigens." Moreover, they are specific—that is—the toxin of the diphtheria bacillus stimulates the body cells to produce antibodies to combat it, but even though present in large amounts, these antibodies are unable to neutralize other toxins, such as those of the organism responsible for lockjaw or tetanus or those of the nefarious streptococcus that is implicated in scarlet fever.

It is obvious that immunity may be acquired in several ways. When Johnny recovers from measles, his mother has the comforting assurance that he is not apt to have another attack. He has acquired a natural immunity to the virus of measles as the result of having had the disease, of having encountered the enemy and come out victorious. But, in the case of many of the more serious communicable diseases, this might prove an extremely expensive and dangerous method of developing immunity. Fortunately, however, following the lead of Pasteur, our scientists have been able to develop vaccines, toxoids and antisera that will protect us against certain organisms by inducing an artificial immunity. This may be active or passive, an entirely different type of agent being employed in each case, with a different objective in view.

Active immunity implies that our own body cells have been stimulated to the production of antibodies, that they are responding actively by the manufacture of protective substances against an organism or some of its poisonous products. Active immunity may be induced artifically by inoculating the individual with small doses of the antigen in question. However, the tissue cells respond slowly, so that antibodies in appreciable amounts may not appear for weeks or months. Two or three injections of antigen usually are required before sufficient protection is attained. Once the body cells have learned to produce antibodies, they will continue for a while, hence active immunity is commonly regarded as a long-term immunity. However, the antibody response to different antigens may vary both in amount and in duration. Immunity to the influenza virus does not last over two or three months, while in the case of diphtheria, it persists for years and may be reactivated by the injection of a very minute amount of antigen, frequently referred to as the "recall" or "refresher" dose.

In passive immunity, the body cells are not involved but protection is acquired by means of borrowing antibodies from an animal, usually the horse, that has been artificially immunized, or from a person who has recently recovered from the disease in question. As these preformed antibodies disappear rapidly from the circulation and as the body cells have not been stimulated to produce others to replace them, passive immunity is a transient condition which does not persist more than two or three weeks. Obviously, active immunity is always preferable, but in an emergency, illness and even death may be prevented by employing passive immunization.

As we have said, body cells respond slowly to the production of antibodies, but frequently the individual needs immediate protection. In that case we may inject preformed antibodies that are effective as soon as they are introduced, with the full knowledge that their value is limited to the immediate emergency situation. Moreover, when introducing preformed antibodies we must give some thought to their source. Unfortunately, a few of us are sensitive to the blood proteins of the horse, either naturally or as the result of previous treatment with a related serum product. For this reason, the doctor will always question us carefully regarding our medical history and make special tests to rule out the question of sensitivity and so avoid the possibility of severe, or even fatal, reaction.

The terms that the doctor uses refer to the various products employed to induce active or passive immunity or to provide the antibodies required to combat the destructive effects of the organisms in the treatment of certain specific diseases.

Vaccines are antigens because of the suspensions of the disease organisms themselves. They may be prepared with (1) organisms that have been killed by heat or other means, (2) organisms that have been grown under conditions that tend to rob them of their virulence for human beings, (3) living organisms of a related species that is not dangerous for man. When vaccines are injected in appropriate amounts, they stimulate the body cells to produce protective substances or antibodies against that particular organism. Thus, the person who is "vaccinated" is able to mobilize his own weapons of defense against future attacks of the disease caused by the organism in question. As antibody production is a slow process, more than one dose is usually required to promote sufficient resistance, but the

Not To Be Sneezed At

In the field of allergy, cosmetics are literally and figuratively not to be sneezed at, because they may be a causative or contributing agent in allergic cases. That is why when there is a history of allergy we suggest that patch tests be made with those of our products the subject is using or contemplates using. If they test positive, further testing with their constituents is indicated to determine the offending agents. These found, we frequently can modify our formulas to suit the subject's requirements. The patch test is generally considered best for testing cosmetics because it most closely approximates the conditions under which they are normally used.

While our products are free from so-called common cosmetic allergens, such as orris root and rice starch, we feel it should be made clear that any of their normally innocuous ingredients may be allergenic. It is our practice to write our patrons a letter to this effect when a history of allergy is involved.

It is our experience that many persons with allergic constitutions cannot tolerate scented cosmetics; therefore we routinely recommend and select unscented products when there is a history or suspicion of allergy. This practice is not to imply or suggest that the subject is sensitized to perfume; it is solely to safeguard against the possibility.

In specific cases of allergy or suspected allergy, when the subject is using or contemplates using our products, we are pleased on his request to send her doctor the involved raw materials for patch testing, also such information concerning our products as may have a bearing on the case.

Since in the light of present knowledge it is not possible, save in specific cases, to make non-allergenic cosmetics, we believe the cosmetic requirements of the allergic individual should be considered by her doctor in the light of the formulas and general characteristics of the products she is using or contemplates using.

Luzier's Fine Cosmetics & Perfumes are selected to suit your cosmetic requirements and preferences. They are made available to you by Cosmetic Consultants who assist you with the selection of suitable Luzier products and show you how to apply them to achieve the best results, the loveliest cosmetic effect.

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immunity acquired is active and, frequently, of long duration.

Smallpox and typhoid vaccine are outstanding examples of this type of immunizing agent but distinctly different products. The smallpox vaccine is prepared from the living cowpox virus as in Jenner's classical experiments and one vaccination produces an immunity that usually lasts for a number of years. On the other hand, typhoid vaccine is a suspension of killed organism. Three "shots" are required to assure protection and reimmunization at frequent intervals is necessary.

Toxins are prepared from the sterile filtrates of bacterial cultures. Only a few bacteria produce these soluble exotoxins. They have a limited value in immunization but are used primarily to test antibody response or an individual's resistance to the destructive effects of the organism responsible for their formation. Very dilute diphtheria toxin is employed in the Schick test that is used clinically to determine immunity to diphtheria.

Toxoids are toxins that have had the "sting" removed by means of special chemical treatment. Although no longer toxic, they are effective in promoting antibody production and inducing active immunity. Like the vaccines, toxoids are slow in acting, necessitating two or three injections for the development of a protective antibody level. Diphtheria toxoid and tetanus toxoid have been used successfully in controlling the incidence of diphtheria and tetanus.

Immune serums or antiserums are made from the fluid part of the blood of animals that have been artificially immunized by means of a series of injections of a vaccine. They contain all the protective substances or antibodies produced by the tissue cells against the organism used in their manufacture. They provide antibodies that may be borrowed either for the treatment of that specific disease or for passive immunization. Antipneumococcus serum and antimeninggococcus serum were extensively used as therapeutic agents in the treatment of pneumonia and meningitis until recently but have been replaced to a large extent by the sulfonamides and by penicillin. Serums are still used, however, in the treatment of certain rare diseases and in some cases as an adjunct to drug therapy.

Antitoxins are similar to immune serums but they are prepared from the blood of animals, usually horses, that have been immunized with toxins or toxoids. As they contain antibodies that will neutralize these toxins, their primary value is in the treatment of diseases characterized by a toxemia, as diphtheria, scarlet fever and tetanus or lockjaw. As in the case of the antiserums, their effectiveness depends upon their potency, the adequacy of the amount injected and the promptness of administration. In emergency circumstances, they may be employed in passive immunization for the protection of susceptible individuals who have been exposed to infection and where time does not permit active immunization. Diphtheria antitoxin and scarlet fever streptococcus antitoxin are sometimes used in this way for the control of outbreaks in schools or in institutions where close supervision of exposed persons is not practical.

Toxin-antitoxin is a special product that is prepared only for immunization against diphtheria. As the diphtheria toxin is too destructive to be used alone, a small amount of antitoxin is added to reduce its effects. However, diphtheria toxin-antitoxin is now being universally replaced by diphtheria toxoid.

Convalescent serum is an immune serum that is obtained from an individual who has recently recovered from a certain disease. It contains all the antibodies produced to combat the effects of the causative organism and may be used as a source of "borrowed" antibodies in passive immunization or in the treatment of the same disease in others. Being a human product, it is preferable under some conditions to either an antiserum or an antitoxin, but it is not usually available at the time or in the amounts needed. Convalescent serum has been employed in many diseases, but perhaps most successfully in the treatment of scarlet fever.

Immune serum globulin or gamma globulin is the fraction of human blood serum that contains most of the antibodies. It is one of the by-products of the war research on human blood plasma and may be prepared from convalescent serum or from normal blood serum. The product now available is derived from normal bloods and contains a variety of antibodies but particularly those effective in diseases that are so common in childhood that immunity among adults is almost universal. Immune serum globulin has a high concentration of antibodies against measles and may be employed for the modification of the disease in children of all ages. It is especially recommended for the prevention of measles in infants and in children under three years of age.

All the products that have been mentioned fall into natural catagories, vaccines and toxoids being employed in active immunization, antiserums and antitoxins in passive immunization and treatment. With this in mind, we should be able to smile knowingly when our neighbor tells us that she had some "shots" of typhoid serum as she was afraid of the water supply out in the hinterlands to which she was going for her vacation. Serum—why, of course, she is using the wrong term; that implies preformed antibodies and passive immunization.

It is a satisfaction to be able to employ these terms correctly when discussing family problems with our friends but it is even more important that we should be able to visualize the reasons behind the doctor's use of the various products. He knows what to use and when to use it. When we are in doubt as to whether baby John should be protected against measles or whether it is time for Jane to have a "recall" injection of diphtheria toxoid, he will be glad to advise us. He is the link between the biological laboratory and the public, familiar with the advantages and limitations of each product and with the medical background and exposure risks of his patient.

Exercise for the Elderly

(*Continued from page* 589)

again seems too severe, let the body remain down, lifting first one leg and then the other, holding the knees stiff. Before long you will be able to do the sit-up, for the abdominal muscles respond to exercise promptly. Do not exceed fifteen or twenty repetitions in one moment.

The best of the mild movements for the small of the back is the "bow." Standing erect, keep the knees stiff, and reach as near the floor as you can. As strength increases, carry the extended arms in line with the body throughout the movement.

The human body must have some sort of physical movements to keep it in trim, no matter how old it is. The worst thing of all is to take no exercise whatever. It has been rightly said that many an old man has been hurried to his grave by an elevator. Stairs provide excellent exercise for old hearts, if one ascends slowly. They are a miniature substitute for hills, which, if not too steep, are ideal heart tonics.

Old hearts really need some exercise, but it must be gentle exercise, and it is better to walk ten miles in one's own time than to rush a hundred yards for a train.

Each person is an individual as far as exercising is concerned. One thinks of the king of Sweden, who when above the age of 85 still engaged in a very active game of tennis. He could do this because he had been playing tennis all his life, and on his eighty-ninth birthday last June his physical condition seemed excellent.

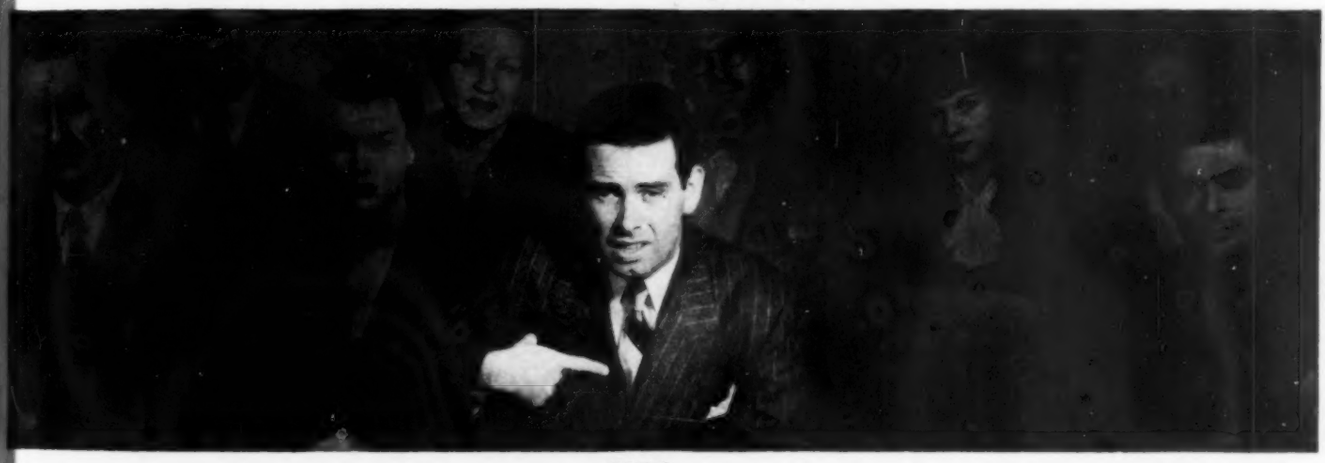
A good rule to follow is to stop any exercise that causes prolonged shortness of breath, or pain, or a sense of oppression in the chest or excessive fatigue. Never go beyond your limit.

DEDICATED TO THE ADVANCEMENT OF PROFESSIONAL EYE CARE

Fallacies and Facts about Seeing

"Are police detectives' eyes better than others?"

NO! But experienced police officers observe many things which would escape the notice of persons not trained in police work. By studying photographs and reading descriptions, a detective learns to recognize a "wanted" criminal when he sees him in a police line-up or on the street. The men who risk their lives to protect our homes and property owe their seeing ability not to "better eyes," but to the fact that their vision is developed through training and experience to meet their special requirements.



"Will glasses alone improve my eyesight?"

NO! You, too, like the detective, should have "seeing ability" to meet *your* visual requirements. You may not be able to achieve this unaided, and the only way to make sure is to seek professional guidance. Glasses alone will not improve your visual skills. Important as glasses are, their aid to your visual comfort and efficiency depends upon the professional services and technical skills of your Ophthalmologist, Optometrist, Ophthalmic Dispenser (Optician).

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Professional services and technical skills such as these are essential aids to your seeing ability — your eye comfort, your visual efficiency. It is for these services and skills — not for glasses alone — that you pay a fee. "*Seek professional advice — not glasses at a price.*"

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Doctor or Cancer Quack

(*Continued from page* 605)

a varicose leg ulcer for about ten years. I have treated it off and on with various remedies and have repeatedly told him that he should stay off his leg for a number of weeks and give it a chance to heal, and to constantly wear a support for the varicose veins that he has had for some years. When I was actively treating it, it would practically heal for a while, only to break down again. He insisted on continuing his work, at which he must stand a good part of the day. It was irksome to him, of course, to coddle his leg, because he was always an active man and had played golf and even tennis. I told him he would have to take his exercise in other ways and now *(with a half-smile at the patient)* he realizes that overactivity for his legs is not good for his ulcer. Anyhow I have not seen him for nearly a year and he tells me that three or four months ago the ulcer, which had been more or less stationary for a while, started to spread, seemed to become harder around the edge and began to pain him more. He came to me yesterday and I am suspicious of part of the edge. I need your help to establish whether or not it is more serious than just a plain leg ulcer.

CHAIRMAN Is the patient healthy in other respects?

DR. WHITE He was the last time I saw him nearly a year ago, and yesterday when he came to me I made a rather thorough examination and could find nothing except what you would expect in a man of his years.

CHAIRMAN Very well, Doctor. *(To patient)* Is there anything you want to add to Dr. White's description?

FATHER No, except to say I'm convinced now that something drastic will have to be done, and I'm willing to do it even if I have to go to bed for a number of weeks.

CHAIRMAN Have you consulted anyone else between the time you last saw Dr. White and your renewed visit yesterday? *(Father looks at Son.)*

SON Yes, we consulted Doctor Q. Ack two days ago and he told us Dad had a very bad cancer in his leg, but he could guarantee to cure it.

CHAIRMAN Oh, I see . . . Did he tell you h o w he would cure it?

SON Yes, he had some mysterious salve and some mysterious medicine, and then he wanted to put on some kind of a boot with an herb in it, and then put electrical treatments on the boot, to make the herb go into the skin where the boot touched it and keep the cancer away from the other parts.

CHAIRMAN Apparently you did not quite like this method, or even the diagnosis, because you went back to your family doctor?

SON Well, we were both a little suspicious because this man was so sure and guaranteed things besides. It would have cost a terrible lot and we would have to pay in advance. We are not rich, you know, though we are perfectly willing and able to pay a reasonable amount to get rid of this for Dad, but this seemed like too much of a good thing.

CHAIRMAN Well, suppose we take a look at the leg. *(To Nurse)* Miss Brown, will you take the patient to the examining room?

(Nurse, patient and son leave.)

DR. WHITE The son is an engineer and he has been trained in science. He grew suspicious right away when this Dr. Ack was so cocksure of matters. I am very glad he did and that he came to us, because it looks doubtful, to say the least.

NURSE *(entering)* The patient is ready.

(Members of Tumor Clinic leave to examine patient, and the stage darkens. As the lights go up again the physicians are returning.)

DR. WHITE Well, what do you think?

CHAIRMAN Dr. Black, you're the surgeon, what's your opinion?

SURGEON The diagnosis of varicose leg ulcer is obvious enough. He has the varicose veins, he has the discoloration of the skin and there is the ulcer about 6 centimeters or so—probably 2 inches—in diameter; part of it is shallow but down toward the ankle it is quite deep and the edges have a rolled-over, cellular, glistening appearance that looks quite suspicious to me of a malignant change. There is only one thing to do and that is take some of the tissue for biopsy and see what it shows.

CHAIRMAN Very good. Meanwhile it won't hurt to check on the patient's general condition. Are there any special examinations you would like us to make to supplement yours, Dr. White?

DR. WHITE Well, he should have a Wasserman test, of course, and perhaps some of your instruments, like the electrocardiograph, will be of help to us in our final summation.

CHAIRMAN Well, we'll do all those things and make full appraisal of his general condition. Are there any remarks that you would like to make? *(Looks around at the members of the Clinic.)*

PATHOLOGIST Only the usual one about the biopsy. *(Emphasizing each point)* Make sure some of the surrounding tissue is removed along with the suspicious area, fix it immediately in formaldehyde solution and if you use the electric loop to remove the piece, don't spoil the tissue by letting it remain too long in contact with the loop.

CHAIRMAN *(smiling)* All right, we will give the pathologist a fair chance and take out a good piece of tissue. You will look after the other laboratory procedures, too?

PATHOLOGIST Yes, indeed.

CHAIRMAN *(To Nurse)* Ask the patient and his son to come in. *(Nurse goes out noiselessly and returns in a moment with Father and Son.)*

CHAIRMAN *(To patient)* Mr. Jones, we are all agreed that you have a varicose leg ulcer but we are not satisfied about the lower edge. We are not able to tell by just ordinary examination if there is anything special about that part, so we are going to ask you to let us take a piece out so that our pathologist can turn his microscope on the tissue and really see the cells.

SON *(to Father)* That's fine, Dad, that's just what I heard is the right way to do it. It takes the microscope to see cells.

FATHER Will it hurt?

SURGEON No, we'll put a little novocaine into it first and then with a little loop just cut out a small piece. There will be no bleeding and not hurt.

SON Well, suppose it is cancer. Won't cutting into it help to spread it?

(Chairman looks at Pathologist.)

PATHOLOGIST No, it's been shown conclusively that a properly taken piece of tissue from an area like this all sealed off by the electric cautery will not cause the cancer to spread—if it so happens that your father has a cancer. Different areas and different regions, of course, require different technics, but in this case all that is needed is a small piece.

FATHER Well, suppose it turns out to be cancer. Do you think there is a chance of curing it?

SURGEON Oh, yes, there certainly is. If by evil chance it should be a cancer you know there will have to be a radical procedure, but we will discuss that with you when we have the information. There is no use in speculating when we can be certain.

SON How long will it take for a report?

PATHOLOGIST Twenty-four to forty-eight hours is sufficient.

SURGEON As soon as we are finished with our regular clinic, say in an hour or so, we will do this job. Meanwhile *(to Nurse)* Miss Brown, take the patient to the operating room and tell them to prepare him for the biopsy.

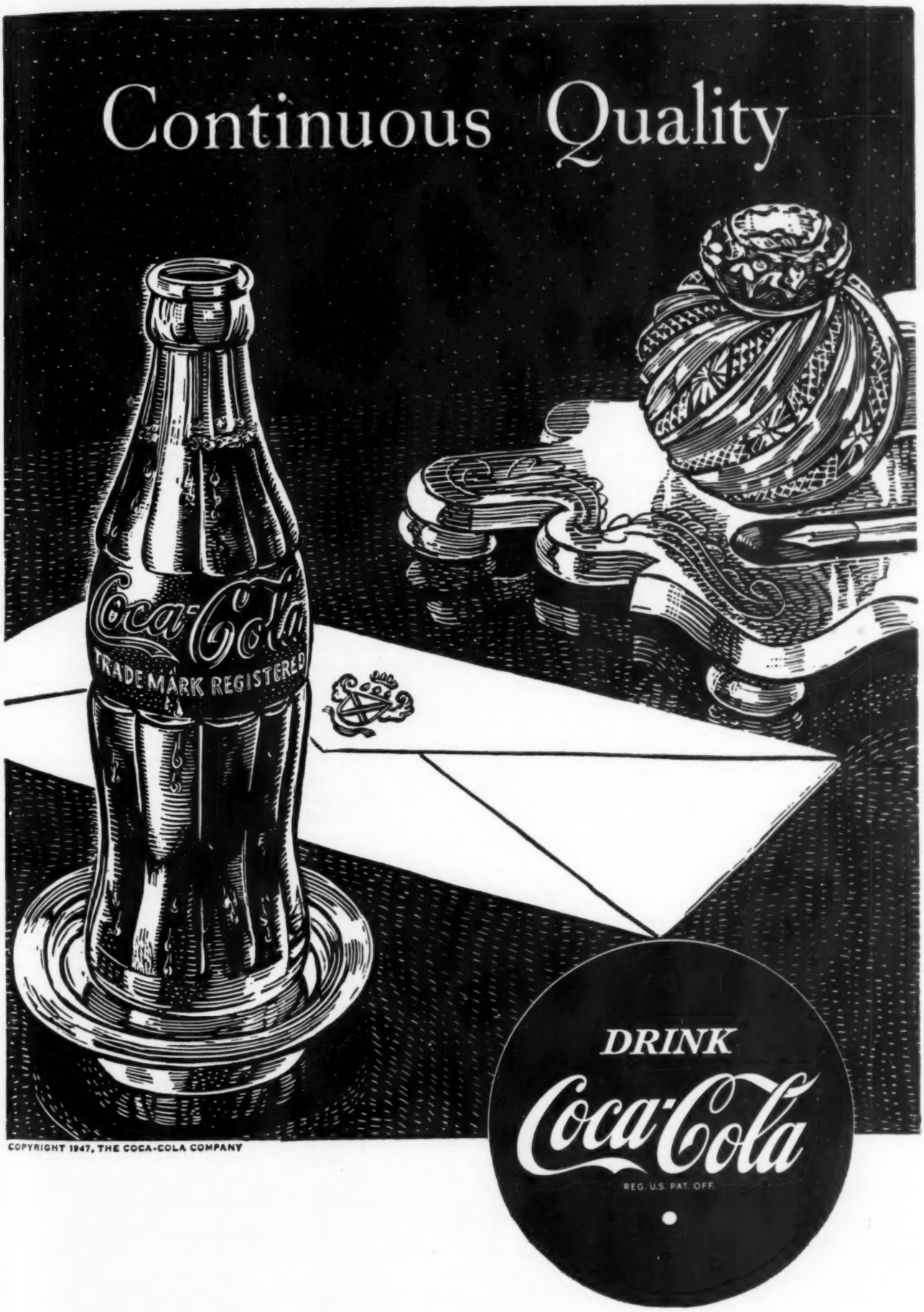
SON May I go along?

SURGEON Certainly.

(Exit Nurse, Father and Son)

DR. WHITE Thank you, gentlemen, and you will let me know as soon as the report is ready.

CHAIRMAN Yes, indeed; and thank you for bringing us this interesting



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case. In two days, say Thursday morning, we will reconvene, and if you like, Doctor, be with us then and we can immediately discuss what measures to take next.

(As the curtain falls he has turned to the Secretary to ask) Who is the next patient?

ACT III

(Tumor clinic consultation rooms. Same as ACT II *except that now on the rear wall a screen has been erected on which slides can be projected to illustrate cases under discussion. Enter members of Tumor Clinic.)*

CHAIRMAN *(to Secretary)* What is the first case this morning, Miss Smith?

SECRETARY Dr. Jones has the pathological report on Mr. Jones.

CHAIRMAN Good. Dr. Jones, will you please give us your report—to show us with what we have to deal.

PATHOLOGIST The section shows an undoubted cancer. I have the sections here.

(He nods and, as the stage lights go down, a photomicrograph of the cancerous tissue is projected on the screen.)

You will note the break in the normal epithelium; the break is filled in with epithelial cells in groups and nests, many of which have whorls of keratinized material in their centers. These nests are infiltrating down into the surrounding tissue in a very characteristic fashion. Of course, there is much infection present, as you would expect, but the lesion admits of no error. Otherwise, my laboratory tests are essentially normal: his Wasserman was negative; his blood count was normal, and so was his urine. His kidney function is good. From the laboratory point of view you folks can go ahead and do as radical a procedure as you think necessary.

CHAIRMAN *(to Surgeon)* Dr. Black, will you discuss this?

SURGEON We should make every effort to remove all of the disease. Surgically this means at least an amputation above the knee. In every such case we debate whether or not the lymph glands should be removed above the place of amputation. We are confronted with a fine dilemma. If we remove them completely there is a chance, and a good one, of lymphatic blockage with a swollen leg after the amputation. If, on the other hand, we do not remove them and there is cancer in them, lymphatic blockage will also occur, only it will be ever so much worse because then there is very little further that can be done. Personally, in this particular patient, I think we should give him every opportunity—therefore amputation and removal of the lymph glands. It is better to be cured of cancer and have a swollen part of a leg than have the swelling postponed for a few months and then have it occur due to cancer.

DR. WHITE The patient will take it very badly, I am certain, but there is nothing we can do otherwise in the face of these malignant cells. Naturally a number of questions occur to me. Probably there are no definite answers but we might just as well ask them to keep fresh in our minds the problems presented and some time, perhaps, they will be answered—if we only aim hard enough toward obtaining the answers. What are the probabilities of a particular leg ulcer developing cancer?

PATHOLOGIST I do not know. Perhaps some of the other members of the Clinic have some figures.

CHAIRMAN Anybody willing to answer this question definitely? You, Dr. Hawkins, are the dermatologist.

DERMATOLOGIST No, I have no definite figures. Of the hundreds of leg ulcers that we see there are not many that develop cancer. All the same it is well to be on the watch for anything suspicious.

DR. WHITE I suppose you would say it was "chronic irritation" that started the cancer?

PATHOLOGIST I suppose that is as good a way as any to hide our ignorance. In any chronic ulceration like this the cells are always trying to heal it. They multiply and try to cover over the defect but they are frustrated by a poor blood supply, lack of proper diet, poor circulation generally, and all sorts of other things so that they are killed off. New cells take their places and continuously strive to heal the wound. Finally, as the result of all this cellular activity, plus, no doubt, infection and strange chemical compounds which appear under such circumstances, irreversible changes i n s i d e the cells make them malignant. If there is anything that we found out in the last number of years in cancer research it is that the cancer cell is changed inside. It doesn't have the right makeup. It cannot do what normal cells do—that is, heal a defect and then stop multiplying. At least, all of this work has concentrated our attention on intracellular dynamics . . . A tough problem, gentlemen, as you all know, but not unsolvable. Some time, when we know more about how normal cells perform their functions, we will have a better understanding of how malignant cells originate. I do not need to remind you that our d e s c r i p t i v e knowledge is quite good but, before we can hope to understand and control these happenings, we will have to translate this descriptive language into terms of chemistry and physics.

CHAIRMAN Now you have it, all you clinicians! Unfortunately, the best we can do at present is simply get rid of the offending cells by cutting or "burning" them out. But we are one with Dr. Jones in looking forward to the time when we can know more and do better.

DR. WHITE Let us hope this day comes soon—and let us hope that in spite of wars and politics continuous study can be made of these problems of all mankind, for they know no war, politics, creed or any other human, emotional setup. *(Sighs)* Well, how about x-ray or radium treatment—in this case?

RADIOLOGIST If I knew exactly how far the malignant cells had traveled I would know exactly where to apply irradiation, but I do not know. Of course, radium and x-rays properly applied will readily get rid of the local growth but it will have to be a destructive dose, especially because the tumor is a keratinizing, squamous cell carcinoma. If I apply the same destructive dose all over the leg and to the lymphatic areas in the groin, I will perforce do damage and perhaps that much to be regretted swelling will happen then. If I just spray a few electrons around, the cancer cells will only thumb their noses at them. If it is decided to palliate the condition, then I can do excellent work. If, on the other hand, it is decided to attempt to get rid of every last cancer cell, then I am afraid I'll not be able to do it. The only exception would be if the cancer is completely localized in a small area around what we see grossly, but we have no guarantee of this. If we want to cure we simply assume that the cancer cells have already been transported a considerable distance from the original place. We took no plates of the bones of the leg. If the cancer has already invaded the bones, then the value of x-ray and radium treatment is much reduced. From its depth and the fixation over the crest of the tibia, I would be inclined to assume that invasion of periosteum and bone has already taken place. It would not be fair not to assume that. It all sums up, in agreement with the rest of the clinic, that a real attempt should be made to cure this patient and this means amputation of the leg and removal of the lymph nodes.

DR. WHITE I see . . . And now we will have to tell the patient and his son. Who will do that?

CHAIRMAN Well, what do you suggest, Dr. White? Will you tell him or shall the surgeon, or shall we tell him as a group, or shall we ask our psychiatrist, who knows how to go about these things, too?

DR. WHITE I really think that the

best way is the direct one. Let's ask him in and tell him what must be done. There is no use in telling him that he has no cancer for he'd know that in that case it wouldn't be necessary to do radical surgery. If we do radical surgery we really must tell him why.

CHAIRMAN All right. *(To Nurse)* Please ask the patient and his son to come in. *(Nurse goes out and returns with Father and Son)*

CHAIRMAN Ask them to be seated.

DR. WHITE *(to patient and his son)* Well, Mr. Jones, the report has come back and there is no doubt at all but that you have cancer in part of this ulcer. The other examinations all show you are in good physical condition and can withstand radical procedures. You note that I use the word "radical," because we are all agreed that your general health is good enough to stand it and that the cancer which you have is still well localized, or confined to a limited area, and there is an excellent chance to cure it. You see, so many of our patients come to us when their cancers are no longer where they started but have spread far and wide, and then we know that we cannot cure them, and so we are forced to temporize and do the best we can to make them merely more comfortable than if we just left the cancer alone. Fortunately, we can usually do this even if we cannot cure the cancer. But in your case it is different. We think you can give us all of your cancer so that the pathologist can put it in a jar of pickling fluid where it can no longer do any harm. *(To Son)* You can see on the ulcer where the growth started and how far it extends grossly, but unfortunately little pieces of the cancer spread out from where it started and it is impossible for us to tell how far it has spread. Therefore we must remove a very wide area to make sure that we get everything. In short, it means that your father must lose his leg above the knee and then have the lymph glands removed from the groin. I know this sounds terrible and it is a big shock, but, pleading ignorance of any other means at present, that is all we can do. On the other hand, the artificial limbs made these days are remarkably practical and many a person goes around with an artificial leg so perfectly that even his best friends do not know that it is artificial.

(The Son had laid his hand carelessly on the back of his Father's chair. Now he is resting it unobtrusively but with reassuring pressure on the old man's shoulder.)

If we merely attempt to cure the local cancer, which we can do, we are quite sure it will come back somewhere else along the leg, probably in the groin, and then very little can be done. So the choice is whether to attempt a cure—and we think there is a good chance—or merely to palliate, by which means there is no chance whatever of at any time effecting a permanent cure.

FATHER *(to Son)* It is certainly awful, but I had a feeling that this is what would occur. I have thought about it in the wee hours of the morning when I couldn't sleep—and I made up my mind that if it turned out to be cancer, I would just ask the doctors to do everything they possibly could to cure it.—Are you sure that removing my leg and doing this other dissection, as you call it, will cure it?

CHAIRMAN Mr. Jones, I am sorry we cannot guarantee any cures. All we can tell you are the probabilities, and the probabilities are that by the radical means you have heard discussed you will remain well.

SON Is there any possibility that the diagnosis may not be correct? In other words, that it is not a cancer?

PATHOLOGIST No, there is no possibility that it is not a cancer. Strange as it may seem in view of all the complexities of the matter, the error in diagnosis with the microscope should be less than 3 per cent and in this particular case there is no chance for even that small error. It is undoubtedly a cancer.

FATHER Well, if that is the case I suppose the sooner it is removed the better. You say I'm in good enough health to withstand the operation?

DR. WHITE Yes, you are. The immediate operative mortality in such cases is practically nothing and in your case, with a good heart and kidneys and other organs, you should be out of the hospital in two weeks and ready for an artificial limb a few weeks after that.

FATHER *(not resignedly, but with an air of decision)* Well, all right, I must bow to the misfortune that my own cells have brought upon me. I still have some work that I think I can do in this world.

SCHOLARSHIPS FOR FOREIGN NURSES

Red Cross nurses of 9 foreign countries have remained in the United States, following the International Council of Nurses held in Atlantic City last May, for six months to one year of study under grants made by the American National Red Cross, the Florence Nightingale Foundation, Institute of Inter-American Affairs and the Spanish Red Cross. They come from Norway, Czechoslovakia, Finland, France, Poland, Hungary, Chile, Brazil, and Spain, says the *Bulletin of the California State Nurses Association.*

Air Travel Easy with Evenflo Nursers!

TWA Hostess Elsie Corbett is shown feeding a baby in flight with an Evenflo Nurser. Other air lines, too, have these modern, easy-to-use Evenflo Nursers in their baby kits to help make travel convenient for mothers with babies. Quite often mothers prepare their own formulas, then fill and seal enough Evenflo Nursers for the entire trip. Thus on trains, planes or buses, they are ready for use when feeding time comes. Complete Evenflo Units are 25c at baby shops, drug and dept. stores. (Separate Evenflo parts — 10c each.)

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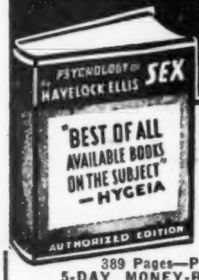

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Will Ross and the Rehabilitation of the Tuberculous

(*Continued from page* 617)

had money he was tolerated but if he didn't, he got short shrift. While that seems strange in a city where the white population had been built up largely from cured health seekers, it is understandable because the town was flooded with sufferers who had scraped up money enough to get to the Southwest and then had taken chances on what happened to them after they got there. There were whole colonies where these people lived in varying degrees of financial stability, mostly weak, and likewise varying degrees in the progress of their tuberculosis.

"One of the peculiar customs that impressed the new arrival was to see undertakers' wagons equipped with alarm gongs such as are on fire trucks, dashing through the streets at high speed," Ross has related. "This was still in the horse and buggy era and these flying undertakers' gigs afforded as spectacular a sight as did the old horse-drawn fire wagons. They lacked only the red paint and belching boilers to make them truly realistic. There was sound reason for this spectacular haste. Some 500 transients died each year in that city, mostly of tuberculosis, and most of them lonely and far from home, ending their days in the myriad boarding houses that catered to the migratory consumptive.

"One could not tell at the moment whether the poor victim would prove to be a pauper and be buried by the county or might be, even though dying in squalid surroundings, from a home "back East" from which a handsome burial fee could be obtained. The chance of the latter was sufficiently good to warrant haste, for the first undertaker to arrive was the one to get the body. And, as more than one might be notified, it paid to make haste.

"It seems crude today but, in reality, it was neither sordid nor unfriendly. El Paso was still in its swaddling clothes and very much of a frontier town. The great migration of the consumptive population of the North and East was at its peak. Every poor victim of the disease, playing his last string of hope, headed out into that great Southwestern country in the hope—vain in most cases—that the climate would work some miracle.

"I used to take a curious and grewsome interest in the game between an Irish undertaker, who boarded in the same establishment that I did, and one of the other boarders. This place was the home of a considerable group of the young and middle-aged unmarried people of the town. There were several of us on the local newspapers, teachers were well represented, and there were quite a number of young business people. Naturally, though one usually neither admitted it nor discussed it, there was a fair quantity of individuals with varying degrees of tuberculosis.

"One middle-aged man who had been in business in El Paso for a good many years made no bones about the fact that he had tuberculosis. Everybody knew it and he didn't care if they did. He was a great friend of this Irish undertaker's. His room was in the front of the house and each noon his Irish friend would drive up to the house clanging the bell and direct a cry at the lower windows, 'Come on out here, Baker, I'm after you.'

"His friend would appear at the window, wave disdainfully at him, and say 'Go along with you, I'm not ready yet.'

"This grewsome bit of byplay was as great a delight to one as the other and, for that matter, to everyone else in the house. It had its small part in adding to the gaiety of life and one put out of one's thoughts the fact that the day would come when the Irishman's visit would not be in vain. As it turned out, the time was shorter than we thought.

"There was a heroic mold to those migratory consumptives. They kept a stiff upper lip and pretended at least to laugh at the fates that were drawing in around them. Thousands of miles from home, in a strange country, they played their strings out courageously. Only rarely were the fates good to them. Only rarely were any of them ever again to see their distant homes."

After a few months of doing nothing, restlessness led Ross to a job that had his physician's approval but, interesting and ofttimes exciting as it was—doing police reporting on a daily newspaper—was scarcely the type of thing for an active case of tuberculosis. Many nights he worked until long past midnight, despite which fact it was obligatory that he be on deck the next morning at eight o'clock. Within five or six months, what few gains he had made had been dissipated and he was growing steadily and dangerously weaker.

The following summer he left El Paso running a temperature well over 100°. On his arrival home, the first sensible move that had been made resulted, on the urging of still another physician, in his going to the newly opened River Pines Sanatorium in Stevens Point, Wisconsin, to "try it out for a week." Dr. Hoyt Dearholt, Secretary of the Wisconsin Anti-Tuberculosis Association, has said that Ross was the sickest man he ever saw get well.

To be concluded in the next issue of HYGEIA.

Sex-Linked Factors In Heredity

(*Continued from page* 591)

Victoria has received the most publicity because of the prominence of the personages involved. Queen Victoria definitely was a carrier of the factor for hemophilia and undoubtedly she must have received the determiner for this defect from her mother's side, the Duchess of Kent, who came from the family of August of Reuss-Ebersdorff, where there were a number of children who died when they were young.

Moreover, among the children of the Duchess of Kent's sisters there also were some early deaths. In view of the existence of hemophilia in various other members of this family, one is justified in suspecting that perhaps all of these children who died in infancy may have had the disease and bled to death as the result of injuries.

The heredity of hemophilia in the line following Queen Victoria is much clearer. Only one of her four sons, the Duke of Albany, seems to have inherited hemophilia, and passed it on through his daughter Alice, to his grandson, Lord Trematon, who bled to death following an automobile accident.

Three of Queen Victoria's five daughters were carriers, and definitely transmitted the disease. One was Princess Alice, whose daughter married the Czar of Russia, and handed on hemophilia to her son, the little Czarevitch. Another was Princess Beatrice, who transmitted the disease to her two children, her unmarried son, Leopold, who died as a young man, and her daughter, who married King Alfonso of Spain and passed the defect on to his offspring.

Two of Alfonso's sons definitely were bleeders. These are the ones already alluded to, who died as the result of injuries received in motor accidents. Whether King Alfonso's daughters are carriers has not as yet been established.

The third daughter of Queen Victoria, who was a carrier of hemophilia, married Prince Henry of Prussia. They had a number of children, and some of them definitely were affected by hemophilia.

During the last twenty-five years doctors have made some effort in the direction of treatment to overcome sex-linked human characters. In particular, they have concerned themselves with color-blindness and hemophilia. Certain vitamins have been utilized for the former and blood transfusions or injections of female sex hormones for the latter; but these have not brought about any improvement in the conditions. In reality medicine knows no cures for color-blindness or hemophilia, or for that matter any of the other sex-linked characteristics mentioned. Such traits are due to heredity, being the direct result of genes for their expression carried by either one or both of the reproductive cells which united to form the individual.

The heredity and development of sex-linked characters follow the same fundamental laws of biology as other ordinary human traits. Those who desire to have normal children, minus the deficiencies which have been considered, provided they themselves are normal, must give attention to the mates whom they marry. As a rule, normal parents give origin to normal children. Even then, some of these presumably normal parents may carry hidden genes for defective traits, which may appear in the offspring. Therefore, it is exceedingly important to know not only something of the immediate parents, but also of a number of generations of the ancestors which preceded them.

Emotional Health in Work and Play

(*Continued from page* 621)

There are, however, other avenues for promoting rest and relaxation and the play spirit of work is one of those. Man's impulse to create or to acquire finds sublime expression in many ways.

Creation through the arts and crafts such as music, literature, sculpture and painting have long been called the language of the emotions. Fantasy and imagination, resulting in handicraft and invention, are methods of expressing the play aspects of work and serve to promote rest and relaxation. The creative impulse may find sublime outlets also through the development of a vicarious interest in those activities involving play at work, and the acquisitive impulse may find satisfaction through the systematic collection of various objects.

Hobbies, as forms of play at work, serve a useful purpose, in promoting rest and relaxation. They have contributed to the welfare and comfort of many.

The electric light, the phonograph, motion picture and many other devices might still be undeveloped if Edison had elected to find total satisfaction in railroad telegraphy; and the airplane would have been longer in coming, had the Wright Brothers been content with bicycle repairing.

Countless thousands in every walk of life need relaxation and rest in some form of play. Many find escape from the tensions of living astride a hobby horse.

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Is That Operation Safe?

(*Continued from page* 595)

secretions of the organ, and without countless hours of repeated, painstaking painless operations on animals to prove that technically the procedures were feasible.

High blood pressure is common. In some instances removal of a single diseased kidney will return this to normal. In another type, removal of nerves lying alongside the spine will lower the pressure so that severe headache disappears and normal occupation again becomes possible.

Osteomyelitis, infection of bone, was formerly considered a process which once started would probably reappear at intervals through life. With more radical removal of bone, accompanied by penicillin or its allies, this condition can frequently be permanently eradicated.

If the bone still remains weak from the amount removed it may be reinforced by large grafts or chips taken from the shin bone or pelvis, and this will return the bone to its normal strength.

The art of surgery includes much more than mere cutting. There is the whole problem of diagnosis to determine whether cutting is necessary. This has been made more correct by such modern technics as examination by x-rays, visualization through tubes inserted into various organs—for example, the bronchoscope for removing foreign bodies from the lungs—blood tests, which are constantly increasing in variety and value, and removal of a portion of a tumor for pathological diagnosis.

All functions of the body are placed and kept in the best possible condition both before and after operation. For the patient with jaundice, there is a danger of profuse and stubborn bleeding at operation. Vitamin K is given for a few days before the operation and practically abolishes this danger. Clotting in the leg veins after operation has always been a source of worry. Heparin given intravenously or dicumerol by mouth now makes this process rare. If it occurs, tying off the main thigh vein lessens the likelihood of further complications. The use of penicillin or the sulfa drugs in infected cases both before and after operation has made all the difference between life and death or between short or long illness. The addition of vitamin C assists greatly in the kindly healing of a wound in a patient in poor general condition.

The person entering a hospital in shock from an accident can frequently be brought back by administering plasma until blood has been typed and cross matched and a transfusion is ready for administration. Intestinal obstruction was much more serious before a tube was devised which can be swallowed and passes on through the stomach to the site of the obstruction.

Through it the gas and intestinal content can be sucked out, relieving distention, making the operation simpler and raising the favorable chance of recovery. Formerly only salt solution was given by vein, later sugar solution also. Now a solution of protein, necessary for continued life, can be given by vein and a person kept alive for practically an indefinite period without taking anything into his stomach.

Persons with fractures often arrived at a doctor's office or the hospital in bad shape, because the broken part had not been put at rest and the bones had been churning around injuring the soft parts further during the process of moving. Now millions of lay persons have been trained to improvise and apply traction splints, so that the person will arrive in a hospital in at least no worse condition that when he was injured.

Only a few years ago any burn covering half the body surface was considered sure death. Now, with the abolishment of all applications to the burn except possibly a lubricant and pressure dressings, with the free use of plasma and later transfusions, with skin grafts following shortly after the first dressing at about ten days, many persons are carrying on who have had much more than one-half the body surface burned—and every person suffering with burns has less discomfort and ultimate disability.

As a result of experience with several thousand amputees during the last war, major improvements are being made in artificial limbs for both arm and leg. This is particularly important since there are more amputations done each year in civilian life in this country than in the entire time of the recent war. It has also been learned that several weeks' supervised training in the use of an artificial limb is absolutely required in order that the patient may get the most benefit from its use. Most of these persons after training can return to earning a useful living.

Many persons enter the hospital perfectly well except for some one complaint. With modern methods of closing wounds with nonabsorbable material, without starvation for the day before and several days after operation, many patients following abdominal operations can be out of bed and walking in one to three days. Not only does it seem to do them no harm, but their whole convalescence seems more rapid.

Exercise of undamaged parts begins as soon as the anesthetic has worn off.

Regular calisthenics for bed patients under the supervision of a physical instructor may be a part of the immediate postoperative treatment in the hospital on the doctor's order. For a person who is well except for a rupture or a fracture, for instance, there is no advantage in letting the muscles of all the rest of his body get soft and thus make his convalescence so much more prolonged.

Many people sustain injuries to the hands, feet, or other parts of the extremities. Active motion guided by a physical therapist, occupational therapy to loosen stiff joints or strengthen wasted muscles, recreational therapy by which, for example, the use of a billiard cue interests a man enough so that he disregards his sore elbow—all of these are a part of modern surgical treatment. Within a few years every good-sized town will probably insist on having an institution to furnish just this type of treatment and keep convalescents' time occupied advantageously until they are ready to return to their jobs.

Aseptic or modern surgery is only about sixty years old. This period represents almost all the advances in surgical knowledge. With each decade it is thought that all surgical discoveries have been made but new ideas always come forth opening up new fields for doing good. One of the greatest advances in surgery is the prolonged residency system in hospitals.

Education in medical schools has been constantly improving, but no one person can begin to cover all the present day knowledge of medicine. Practical training has to be saved for hospital work. A year's interneship gives a good grounding for general practice. But for the man who wishes to enter any specialty, such as surgery, several more years of training in the hospital under careful supervision are absolutely necessary. Our younger generation are getting this training and with the experience of years will be better all-around surgeons than we have now.

Surgery will continue to merit your confidence increasingly as the years pass because if you make certain that you are referred to a certified surgeon you will be cared for by a highly trained man. He will necessarily be a true scientist as well as an artist.

The new department

"INFORMATION FOR MOTHERS"

Appears on Page 573

of this issue of HYGEIA

This Year Beware of Ticks!

(*Continued from page* 623)

less than a thousand persons contract Rocky Mountain spotted fever each year. But of this number, nearly one-fourth die. Pneumonia, appendicitis and other more common illnesses have responded favorably to medical or surgical management. As a result, particularly in the last decade, an encouraging reduction in mortality has been effected. This does not hold true in tick fever. That dread affliction carries off nearly as many victims as it did forty years ago!

Rocky Mountain spotted fever is showing an alarming local and regional spread. It has been detected in places where, until a few short years ago, its presence was never anticipated. Now that travel restrictions have been eased, more people than ever look forward to vacations in the West, where a number of our national playgrounds are to be found. Many of them will be potential victims of tick fever.

Just what the future has in store is anyone's guess. It may be that the disease will never assume proportions of national significance. There is the possibility, on the other hand, that it can become a grave menace. There are variable factors over which no one has any control, but common sense precautions will, nevertheless, prevent most tick fever infections. The responsibility, naturally enough, rests with everyone. THE END

DANGEROUS PESTS

Flies can be controlled in residential areas, State Health Director Roland Cross of Illinois suggests, by keeping all garbage in covered containers and removing it at regular intervals; promptly clearing rotting vegetables and debris from the garden, and spraying the garbage containers and surroundings, doors and window frames, porch ceilings, and other places where flies congregate, with a 5 per cent solution of DDT.

Mosquitoes can be virtually eliminated by spraying outdoor areas with DDT every two or three weeks and inside areas once, thoroughly, during the summer. But, Dr. Cross warned, "DDT cannot take the place of proper sanitation."

DIRECTORY OF AGENCIES

A directory of agencies and organizations concerned with rehabilitation and services to the handicapped has been compiled by Dr. Howard A. Rusk and Eugene J. Taylor and published by the *New York Times*. Dr. Rusk was the wartime director of Convalescent Training Division, Army Air Forces.

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Impetigo—It's Contagious

(*Continued from page* 599)

it at times referred to as infantigo, very likely because of its pronounced tendency to affect children, although no one at any age or in any station of life is totally immune from it.

You can always suspect it if scab-covered sores or ruptured walled blisters appear on (mostly) exposed surfaces.

The sores arise on a highly inflamed skin that seeps a thick, sticky, yellow or brown fluid. Scratching to relieve the itch causes sufficient injury to permit minute bleeding, discernible in the black discoloration of the scabs or crusts. These encrustations pile up on one another as the sticky, purulent secretion dries and is plastered on the sore and the surrounding skin.

The blisters usually lift the epidermis completely off its base. As it is shed, the moist, bright red sore and painfully naked skin underneath present an oozing wet surface. The infection is carried by any of the component parts of the sores, scabs, or moisture that emanates from the impetiginous lesions.

It is important to know that impetigo is spread not only by direct contact with the infected spot but also by intermediary agents handled by the infected person. Since children are so prone to infection with impetigo contagiosa, the schoolbooks, pencils, pens, playthings, door handles, towels, clothes hangers, and so on must be recognized as the most frequent vehicles of the spread to others.

This means of course that these effects be not interchanged but kept personal and separate even if the possessor is apparently free of any skin infection.

Impetigo contagiosa should be treated by a physician, not by a neighbor, not by a druggist, not by a school nurse. The reasons for this are:

1. Other infections, more serious in nature, resemble impetigo contagiosa.

2. People with an impetiginous infection, especially older people, may have some serious underlying disease, such as diabetes or chronic nephritis. The earlier these are recognized the better the chances to control them.

3. Long-lasting impetigo contagiosa causes other than skin damage. It may sensitize the patient to staphylococci and streptococci. This is of serious portent on account of the ubiquitous nature of these germs.

4. Danger of infecting others must be kept at a minimum.

In the treatment of impetigo contagiosa, we make use of local antiseptics such as ammoniated mercury ointment and bacteriostatic agents locally applied, such as sulfathiazole ointment. The question of clearing away scabs, crusts, dried secretions must be decided by the physician in each case. No hard and fast rules can be laid down for in cases that might superficially appear alike opposite measures are indicated.

The brilliant medical researches with the miracle mold product, penicillin, indicate clearly that, as in all other infections caused by staphylococci and streptococci, there too it is applicable, but its use must be reserved for the unusually severe case so as not to sensitize the patient to this antibiotic, this captain of the microbic world, without full justification.

To summarize:

Impetigo contagiosa is an infectious disease of the outermost layer of the skin.

It is caused by the everpresent germs belonging to the families of staphylococci and streptococci.

Though it may affect anyone at any age, children are most frequently infected.

Careful search for some coexisting chronic disease is imperative in older persons who are infected by it. Diabetes, chronic nephritis and other serious diseases may thus be discovered early.

Do not depend on inexpert advice for the treatment. The quickest and safest cure requires individualized professional advice and care.

SAFER HIGHWAYS

Statistics showing a marked improvement in the traffic safety record following the President's Highway Safety Conference last year have been published in *Safety Education*.

Since gasoline was rationed through the greater part of 1945 the statistician went back to 1941 for a year of approximately the same volume of traffic and free of wartime speed restrictions. For the first five months the death toll was about the same in each of those years, but for every month beginning with May, when the President's conference was held, 1946 showed a reduction in traffic deaths, in comparison with 1941, ranging from 19 up to 25 per cent.

MEDICAL AID TO CHINA

For the first time in six years the American Bureau for Medical Aid to China has issued an appeal for funds. Six years ago it joined other agencies in United China Relief, later a participant in the National War Fund. Now the joint agency has been reorganized under the name of United Service to China. The need goes on in a reconstruction period that, says the Medical Aid Bureau, unfortunately has proved more difficult for the weary Chinese than even the darkest days of conflict."

A Foot at a Time

(*Continued from page* 598)

permit the necessary evaporation of foot heat and moisture.

While the grownups have their foot health rules there are equally important rules to be observed in the care of infant's feet also.

A baby's shoe should have a broad toe to allow a natural free position of the foot; a snug, well fitted heel to keep the foot from moving from side to side; a shoe long enough to extend well beyond the toes, but not so long that the foot does not seat itself properly; a broad and flexible sole to permit perfect foot freedom and plenty of depth in the instep so the shoe will not press down on the arch or hurt the nerves and muscles developing there.

Remember the old adage, "Just as the twig is bent, the tree's inclined" can be applied to the care of growth of your baby's feet. Don't you sometimes wonder where those little feet will walk in the estimated 65,000 miles that it has been estimated the average person walks in a lifetime?

Because shoes are such an integral part of countries they are also interwoven in their customs too. For instance did you know that in part of Abyssinia donkeys wear men's discarded shoes as a protection for their feet? When a person is struck by lightning in Holland, all of his shoes are immediately buried to extract the evil and restore the patient's health; when the native men of Sonora, Mexico, wear red shoes it indicates that they are seeking a wife, and history reveals that in ancient Egypt a headache "cure" was to inhale the smoke of a burning sandal.

SPORTS FOR EVERYBODY

A tendency toward the development of sports for both sexes and all the people is noted in excerpts from a book now in preparation by George D. Butler published in a recent issue of *Recreation.*

Associated tendencies include widening opportunity for development of skill, expansion of outdoor winter sports, or of sports which can be enjoyed the year round; greater emphasis on those which men and women can enjoy for years rather than the strenuous games suitable only in youth, and the development of sports as social recreation instead of a competition in which the all-important point is victory.

As an indication of the trend toward recreation instead of pure competition the article quotes one observer's list of "fastest growing" sports: skiing, fishing, bowling, softball, badminton, figure skating, bicycling, basketball, table tennis and paddle tennis.

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Protecting Your Child From Allergy

(*Continued from page* 603)

of feeding excessively large amounts of any food, including milk, should be avoided. Milk should be boiled and evaporated. Milk is preferable. New foods should not be introduced during or shortly after a digestive upset or diarrhea.

A more conservative attitude should be developed toward the practice of giving foods other than milk during the first few months. A large variety of foods should not be given during the first year of life to an infant of an allergic family or to one who is allergic himself. Raw egg, either white or yolk, should not be given any infant.

Hard-boiled egg, either white or yolk, can be started at 5 or 6 months. It is probably best not to give whole coddled egg until the child is 12 months old, and when it is given the white should be well coagulated.

All new foods should be given regularly when once started. If a new food is introduced it should be fed the child again within three to seven days, and at comparable intervals from then on until he has developed thorough tolerance for it.

From birth normal children should avoid excesses, particularly of allergenically potent foods. Raw eggs, raw meats, raw vegetables, fruits and cereals should be carefully avoided, especially when the child is sick. Raw milk is always taboo for sanitary reasons.

The desirable way to feed a child is: no food between meals, sufficient but moderate amounts at mealtimes; give him cooked food when he is sick and afterward until his digestive capacity has been completely restored. When he eats a food he has never encountered before, it should be eaten in small quantities. It would be safer to cook it before he eats it.

The child of allergic parents or the child with infantile eczema should follow the above rules with double force. In addition every new food that he eats should be thoroughly cooked. New foods should be added one at a time, and fed him regularly at intervals of three to seven days.

Dust and Pollen Allergies: Environment is the danger here. Attention first must be given the nursery. It should be furnished simply, without hangings or heavy rugs. Everything in it should be washable so that cleaning can be done without raising much dust. Articles such as down and feather pillows, comforts and overstuffed furniture, which produce dust, should be eliminated altogether or reduced to a minimum. A mattress and pillow stuffed with a good quality of hair or fiberglass is preferable. Good cotton linter and feather stuffed mattresses and pillows that are carefully covered with an impervious textile may be safe.

Avoid heavy silk and woolen materials in clothes as well as environment. Furniture which gives off dust, even if located in other rooms, should be covered with a down-proof material.

Infants who sleep with pets or stuffed woolly toys and those who bury their heads in the bedding may be disposed to develop allergy.

The child should not be exposed to dust or pollens unnecessarily. The seashore or other sections of the country that are relatively free of pollens may be best for vacation purposes especially for the infant and young child.

Insecticide sprays which contain pyrethrum should not be used; this ingredient appears to be a potent allergen closely related to ragweed pollen.

Drug Allergies: Responsibility here falls mainly to the physician, but parents must be cautioned against "doctoring" their children. Drugs should not be given the infant or child indiscriminately, or in large doses. Unfortunately this is being done with sulfa and penicillin drugs today. Many cases of allergy to these remarkable new drugs already have been reported.

External medicaments for the skin and mucous membranes should not be used indiscriminately.

Caution should be observed in administration of excessive amounts of drugs to pregnant women and nursing mothers.

Horse Serum Allergies: The prevention of serum sensitivity rests almost wholely on the shoulders of the physician. However—the parent may aid in one important respect: diminishing excessive contact with horses. All children should be (and in fact most children are) immunized with diphtheria and tetanus toxoid and given booster doses of toxoid when necessary. This eliminates the need for horse serum antitoxin.

A Final Precaution

Parents must not suddenly become alarmed and make drastic changes in the child's diet. They must remember that in most instances a good pediatrician is prescribing a diet which automatically includes most of these precautions, and that—if his advice is followed—the child will be safeguarded. These precautions are to be used by the parent in making an intelligent effort to protect the child. If there is doubt in the mind of the parent about the diet, it is certainly permissible to ask the pediatrician

questions concerning the desirability of a change.

It is of utmost importance that the parent realize what an indifferent attitude toward the rules of eating or feeding may cause. A slip (such as feeding the young child raw egg in some preparation) or carelessness (such as allowing the child to eat any and every food without first checking to see what protein properties it contains, and whether they are highly allergenic) may be the cause of the child's contracting an allergy that will trouble him for years.

Finally it must be remembered that religiously following all these precautions will not guarantee your child immunity from an allergic disease. It should reduce the number of cases in America by 50 per cent. There will still be the other 50 per cent. By giving our children the best opportunities to avoid allergy we can make a great stride toward final defeat of this disease.

The main thought to bear in mind as a simple rule concerning allergy is this: A person cannot acquire a food, dust, pollen or vaccine allergy without having first been exposed to that particular dust, food, pollen or vaccine.

If, therefore, a conservative attitude toward feeding the child is taken, if offending substances in the environment are reduced, and if special care is taken in the danger periods—before birth, in infancy and early childhood, during illness and convalescence—the child will have the benefit of all precautions now known about the prevention of allergy.

When Allergy Is Inherited

Concerning hereditary allergy, investigations have shown that three-quarters of all children whose parents both suffer from allergy will also develop the disease. Most of these will show symptoms before the age of 10. Where only one parent is allergic, half of the children will become allergic sometime in life.

What can be done if the child inherits an allergy, or acquires it in spite of precautions? Can he be desensitized?

The answer is, in many cases, yes; in others, the offending substances must be removed.

In most cases it takes a long period of testing to find and eliminate the causes of allergy—sometimes several years. In most cases the allergic person is sensitive to several different substances, not just one. These are not easily indentified and a series of tests must be made in order to isolate the definite causes. For instance, a child may be sensitive to milk, egg, wheat, several household or neighborhood substances and one or two pollens—each capable of causing allergic symptoms. In such a case, elimination of just one of these causes will not eliminate the allergic symptoms.

In order to find out what substances are producing the allergic symptoms, pediatric allergists plan long-range programs of testing and treatment. In the case of environmental, dust or drug allergies, after locating the cause, the general procedure is to eliminate it—that is, remove it from direct contact with the child. This also is used in some cases of food allergy—simply stop giving the offending food in raw or lightly cooked form to the child; or else substitute the cooked denatured forms of the offending food. In other cases of allergy, the doctor first eliminates the food from the diet, then attempts to build up tolerance of the food by introducing it to the child in minute quantities, bit by bit over a long period.

In any case it is a long, complicated process. It should be attempted only by the doctor, pediatrician or pediatric allergist.

Parents should not shake their heads and agree with the common fallacy that "there is nothing to be done about allergy." There is something to be done; great strides have been made, many people have been helped. Many more can be saved from these allergic forms of disease.

With determination and vigilance parents can protect their children from allergy.

WHEN IT'S HOT

An intensive wartime study of the factors which make heat harder or easier to bear has now been published under the title of "Tolerance of Man Toward Hot Atmospheres," by E. F. Adolph, as a supplement to the *Public Health Reports.* The work was conducted at the University of Rochester largely under OSRD contract.

The investigations disclosed that the wet bulb temperature, which is a measure of both heat and humidity, is a convenient index of human tolerance. Wet bulb temperatures above 90°F can rarely be endured indefinitely. While men seated at rest and unclothed were able to endure wet bulb temperatures above 95°F for four hours, intolerable temperatures at work were fully 15° lower.

Factors that help men bear the heat include sufficient breeze to keep the sweat dry; shade and, if shaded, absence of clothing; "getting used to it"; plenty of water and salt; physical fitness and adequate sleep.

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When You Retire Then What?

(*Continued from page* 613)

promised myself that some day I would really get down to it and find the answer. But why hurry? I was still comparatively young. There was plenty of time to come to a conclusion about the future—but then came the doctor's verdict and orders. Consequently, I am suddenly filled with a sense of wonderment and some fear as to what is in store for me.

In trying to find a solution, I made one actual attempt at retirement but foolishly neglected to provide an occupation for myself, depending upon my love of travel and beautiful exotic surroundings to furnish a continuous interest. It was in 1932 when the downward spiral of the depression reached its lowest point. Like everyone else, I had striven to the point of exhaustion against it, only to sink deeper into the morass.

I went abroad and traveled extensively in many countries. It was a marvelous and engrossing experience but it broke down at last, when I began to realize its aimlessness and futility.

After the initial novelty had worn off, the whole performance lacked savor, not unlike sitting down to a wonderful meal of all the things one likes best only to find that there isn't a grain of salt in it.

This went on for months but the results were always the same—initial fascination followed by boredom and uneasiness. I suppose that as long as new places lasted in Europe and Africa, I could have gone on. But when it came to digging in somewhere and making a life for myself, I was without the inner resources. I may be looking for a scapegoat, but frankly I lay the blame on my training or rather on my lack of training.

Eventually, I had to admit defeat and return home. But did I profit by that lesson? On the contrary, I jumped into work with no further thought of preparing for the future.

Now, faced with the necessity of immediate action, I am at a loss as to how to go about it. I have always read a lot but only for information or entertainment and not from an analytical viewpoint. I have never tried to visualize the thought required to convert a given set of material into a readable piece of writing. I did not realize that there may be a hundred different ways of expressing the same idea or that an interesting piece of writing requires technic and style acquired only in study and a long apprenticeship.

This first attempt to express myself through writing has been thoroughly enjoyable. I believe that the doctor may have hit upon a solution of my problem if, with practice, I can acquire sufficient ability to satisfy my own demands. But that takes time and, at this late date, I have to start from the beginning and acquire the tools needed to express even such meager ideas as I may have.

I am convinced that my situation is parallel to that of others who have reached a corresponding period of life, and that it will be the same for millions to come if some concerted and well directed efforts are not made to anticipate it.

Preparation for this phase of life should become a recognized and customary part of the curriculums of our educational institutions. It should begin early and should continue unabated throughout school and college career. It should take the form of regular courses with capable instruction, classes, lectures and suggestions. The subjects of the courses should be wholly elective. They should be broad and flexible to allow the student opportunity to develop an interest in and to determine by trial and error the occupation, or avocation, for which he is best fitted, and which is most likely to meet his requirements when he is at last pushed aside and has to give up his business or profession.

Once a student's interest has been aroused and he is reasonably certain that he has found the avocation most suitable to his future needs (he should be permitted to change if he so desires), he should work on it continuously to increase his ability and should be graded exactly on that subject as on his other studies. Work on the selected subject should proceed simultaneously with the student's preparation for other phases of life, and with equal emphasis, for some day this phase will become the most important.

During the active and productive years, this avocation would provide sorely needed relaxation and uncover hidden talents that otherwise might never have come to the surface. Also, by constant endeavor a satisfying degree of competence would be achieved. That is of paramount importance as ultimately the individual will become his own most exacting critic.

Few of us accept incapacity or old age gracefully. Our resistance and dissatisfaction is determined to a large extent by the degree of our unpreparedness. A counterirritant must be ready.

This appeal for instruction and preparation is made not for myself, as I am already face to face with the emergency and must sink or swim by my own efforts, but for those who still have time to benefit by it. When it is realized that the period for which I am appealing may represent anything up to 50 per cent or more of one's adult life, it assumes a degree of importance that justifies the wholehearted application of our most able educators.

Health Conditions in Greece

(*Continued from page* 601)

and physical rehabilitation, the Rev. Dr. Yphantis called in a physician to examine his young charges. Sixty-seven of the seventy-four had tuberculosis.

And further to understand the appalling conditions, one should know that in the entire country there are only 152 small hospitals. Again and again, I have forced myself to visit so-called hospitals in rural sections. Some of them are in such bad condition that even scientists are repelled. They are small and miserable. Many are virtually in ruins with critically ill patients on ramshackle cots in cellars littered with rubble.

Dr. Valaoras' information indicates that there are less than 17,000 beds to service Greece's 7,500,000 population. He states that there are only 6,000 beds in the provinces. This constitutes roughly one bed to every 1,200 persons, as contrasted to one bed to every 80 persons in the United States.

On many of my travels I have passed through certain huge hinterland areas in Greece that have no hospital facilities at all. There, if a person becomes ill, he must walk or be carried great distances to get any kind of medical attention. And, when he gets there, that attention is, nine times out of ten, inadequate.

Paralleling these conditions, there is an almost unbelievable lack of trained medical personnel. My colleagues in Greece number less than 7,000, most of whom practice in urban areas. This adds up to something less than one doctor for every 1,000 persons. In the United States, there is approximately one doctor to every 741 persons. On the face of it this picture might not impress you as being too black. But remember that large sections of Greece have no medical practitioners.

The situation in the field of graduate nursing is even worse. Imagine the Greek nation with only 600 registered nurses, or one nurse for every 12,000 persons. Just compare these figures to those in America where every 454 Americans are assured the services of a nurse. And, even here, medical opinion says that the number of nurses in the United States is dangerously inadequate.

To make conditions even more crucial, UNRRA terminated its activities last December. The Greek delegate to UNRRA, Prof. Zenophon Zolotas, had warned that the situation of Greece would be desperate if aid was abandoned.

"Greece's foreign exchange resources are extremely meager," the professor said then. "If we start borrowing to cover our vast needs in medical facilities, personnel, and foodstuffs, we will sink hopelessly into debt—a situation as bad for the rest of the world as for Greece."

Considering all these distressing facts, I became, at one point, terribly discouraged over my country's future. However, after a recent conference with Greek War Relief officials I began to see the first indications of light over the dark horizon. They assured me that the Association has come forward with a comprehensive, far reaching program.

Dr. Meyer told me the medical plan is to be built around 150 rural Health Centers established at strategic locations. Mobile clinics are to radiate out from the Centers like the spokes of a wheel, operating deep into the almost inaccessible hinterlands. Already 28 of these mobile clinics are in operation and 6 are being constructed, but scores more are needed. In addition, the Association has projected the construction of rural general hospitals and sanatoria at key points.

"Our rural Health Centers will furnish a service that has always been inadequate but is now almost wholly lacking," explains Dr. Meyer. "Adequate diagnosis, so necessary to combat disease and obtain a favorable prognosis, will be the Centers' first aim."

Actually, Dr. Meyer makes it clear that the Health Centers will offer a complete public health service including sanitation work. They will give immediate relief, provide public nursing service and dental service, and cooperate in the control of communicable diseases and in sanitary services. They will provide laboratory and x-ray diagnosis for the community, assist the Greek authorities in a program of public health education and provide ambulance service when needed. Special emphasis will be placed on prenatal infant care and preschool hygiene. Where conditions make it necessary the Health Center will provide medicines and supplementary feeding for children and nursing mothers.

But Greece needs more than efficient American medical equipment. This in itself can serve little purpose without adequately trained personnel. Perhaps one of the Greek nation's greatest needs today is for specialists—American talent which will volunteer to train Greeks in research and the latest medical technic.

We Greek scientists would like to arrive at a complete understanding with our American fellows. We need a free and constant exchange of the latest scientific information, not only in the medical field but in all branches of science. If I can impress these facts upon the American people and American scientists, I will consider my visit to the United States a success.

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Sweet Tooth Versus Sound Teeth

(*Continued from page* 615)

decay control are under investigation.

Certain bacteria have been shown to be associated with the decay process. When caries is active these bacteria are present in the mouth; when no decay exists they are absent. A very few but fortunate people have no decayed teeth. They do not have these microbes in their mouths, yet they consume an ordinary amount of carbohydrate food.

It has been found recently that the alkaline salts of ammonia are detrimental to these bacteria. People who are immune to dental caries have the ability to develop ammonia naturally in their mouths and it is because of this that they are free of these microorganisms.

An investigation is being made to determine the basis for this natural ammonia production in the hope that when the mechanism is understood it may be developed in those who lack it. Likewise the possibility of stimulating this mechanism through the frequent use of an ammonia-liberating dentifrice and mouth rinse is under study.

It has been known for several years that people born and raised in a community where there are one or more parts per million of fluorine in the drinking water have significantly less decay than occurs in areas where there is no fluorine.

Apparently the effectiveness of fluorine is derived in part at least from its ability to render the tooth substance less soluble in acid. Fluorine has a chemical affinity for calcium and when it comes in contact with calcified tissue such as dental enamel it combines producing a fluorapitite which is one of the least soluble of the calcium salts. Experiments have shown that the acid solubility of tooth enamel is reduced after exposure to fluoride solutions. Consequently fluorine is being applied to the dental tissues in various forms to determine its usefulness in caries control.

It is a very poisonous element and should be used cautiously and under strict supervision. The safest method is local application by the dentist. The strength of the solution, the number of times that it must be painted on the teeth, and the necessity of the dentist cleaning the teeth before application are some of the problems that are being studied.

The possible use of tablets or lozenges that will liberate fluorine in the oral cavity is being examined, but as yet there is only meager evidence to support it. There is a possibility of overmedication by this method.

Several communities have added fluorine to their drinking water so that it is present in the best concentration, one part per million. What effect the artificial introduction of fluorine will have is not known. Probably no damage will result from such treatment, but until these well controlled path-finding tests have progressed for a sufficient time to establish scientifically their helpfulness and harmlessness, other communities should not be stampeded into the use of this possible method of caries reduction.

Research is being conducted to learn if decay can be controlled through the use of enzyme poisons. Mention was made previously of the fact that acids are formed from the fermentation of carbohydrates by the chemical activators—that is, the enzymes—produced by bacteria. If some substance could be placed in the mouth that would render these chemical activators inactive, then no acid would be formed even though the damaging bacteria and carbohydrates were present.

One such substance now under study is vitamin K, which is prepared synthetically and placed in chewing gum. Other enyzme inactivators are under test; however, their use is in the experimental stage and until more information is available and more time has elapsed to decide their effectiveness, they cannot be recommended for general consumption.

There is the possibility of reducing the amount of dental decay by the frequent use of a dentifrice that contains carbamide, which is urea synthetically prepared. Carbamide diffuses through the bacterial film on the vulnerable tooth surface and is converted into ammonium carbonate by an enzyme, urease, which is present in almost all mouths. Ammonium carbonate is alkaline and would neutralize any acid formed from carbohydrate in the bacterial film. Dr. Robert Stephan reported approximately 60 per cent reduction in decay activity in the mouths of about 200 people who used such a dentifrice for a two year period.

Many have condemned the effectiveness of tooth brushing for controlling dental caries maintaining that people who brush their teeth have more decay than those who do not. The reference to those who do not usually implies those natives living in their natural environment consuming unprocessed foods that require chewing. Those who are eating refined carbohydrates find that tooth brushing is necessary to supply some of the stimulation and cleansing efficiency which soft, cooked diets do not supply.

Tooth brushing for caries control has not had a fair trial, first because teeth are not brushed at the proper time and second because they are not correctly cleaned. The usual practice is to brush them the first thing in the morning and the last thing at night. Experiments have demonstrated that when the mouth is rinsed with a sugar solution, acid begins to form in the decay susceptible areas almost immediately. Within twenty to thirty minutes the maximum acid production has occurred and the acid formation tapers off in an hour or so.

The correct time to clean the mouth to reduce decay is immediately after eating before the acid-forming systems have an opportunity to act.

And people must be taught how to brush their teeth; if it is done thoroughly, it is not a simple, thirty second procedure. Such a practice only touches those prominent surfaces which require no cleaning. A recent survey in a children's dental clinic showed that it took an average of seven demonstrations per child given during consecutive appointments before the child could manipulate the brush correctly without help from the dentist.

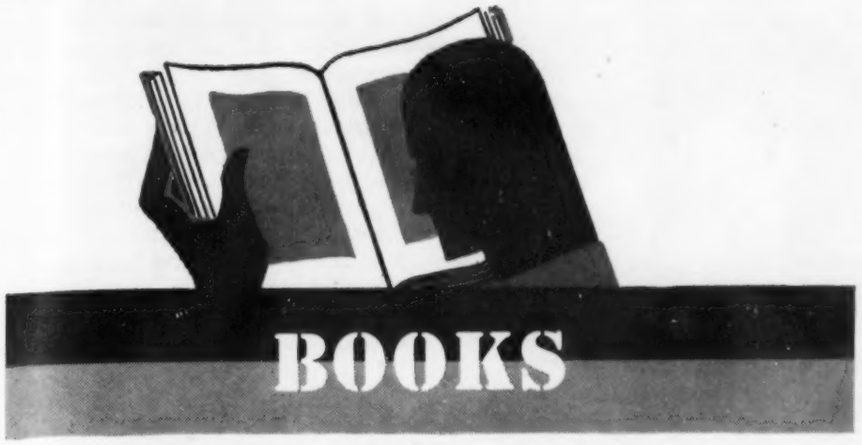
The practice of staining the teeth with a harmless dye to demonstrate the position and extent of the bacterial film that has accumulated on the teeth is an astonishing revelation to patients—even to those who think they are scrupulous in their oral hygiene. The accumulation pattern varies with the individual and the details of the cleaning technic must vary accordingly. So let us not condemn tooth brushing until we have given it a chance to show what it will do if it is performed correctly and at the right time.

We are at the point where tooth decay can be effectively controlled. Methods are available but they depend for their effectiveness on the complete cooperation of the patient, and this includes restrictions in the eating habits that many will not conscientiously observe.

The child who is continually having cavities filled should be placed on a strict diet under medical and dental supervision; candy, soft drinks, and confections of all types should be eliminated for an extended period. Between-meal eating of carbohydrate foods should be discontinued, and sweet desserts should not be permitted. Fresh fruit and nuts should be substituted. Such a diet should be strictly followed for several weeks. Then a favorite dessert may be included two or three times a week.

Many people report, however, that after eliminating sweets for several weeks they lose the desire for them.

Dentists now have available safe and effective measures for assisting decay control that can be applied to those who have not the will to utilize the necessary hygienic measures or do not get complete results from them.



PERSONAL COUNSEL

By Robert Frank. Informative Books, Box 81, Station O, New York 11, N. Y. Pp. 306. 1946. Price, $3.50.

Advice, ranging from precautions to canceling appointments, detailed discussions of drinking problems, premarital sexual exposure and avoidance of marital difficulties, is presented in this volume. This material is given in the form of letters to a composite female inquirer, and follows through the stages of courtship to and including the early days of marriage. The author is to be commended for the dispassionate way in which the various subjects are handled and for the avoidance of dogmatic statements. At the conclusion of the advice-to-reader section of the book, the venereal disease question and its solution are discussed. In a special addendum the matter of adequate prophylaxis for the male is given in considerable detail. Most of the material in this book is factually sound, and the fairness with which it is offered is conducive to sounder understanding. It is more than light reading, and probably is not suited to any level below college.

WILLIAM W. BOLTON, M.D.

WHAT YOU DON'T KNOW MAY HURT YOU!

By J. A. Rudolph, M.D., and Howard N. Rose. Dorrance & Company, 364 Drexel Bldg., Philadelphia, 1946. Pp. 138. Price $1.50.

This small book is full of briefed case reports illustrating various forms of allergy. It contains innumerable examples of possible allergies; explanatory material is rather limited in quantity and elementary in type and is almost lost among the numerous illustrative case histories. In general, however, it should be useful to suggest possibilities for the causes of allergy and as a source of suggestions for possible approaches to treatment.

Scientifically it is sound. Its brevity —one hundred and thirty-eight pages —and its low price should make it a popular book among allergic patients and their families.

W. W. BAUER, M.D.

ACTIONS AND USES OF DRUGS —A TEXTBOOK FOR NURSES

By Windsor C. Cutting, M.D. Stanford University Press: Stanford University California.

The broadened curriculum of the courses in nursing has telescoped materia medica, pharmacology and therapeutics into a single subject. The textbook by Doctor Cutting has been developed to meet this need. The book is a compilation of the knowledge of the most widely used drugs classified in groups and covering their sources, their actions, their uses, their preparations and their dosages.

MORRIS FISHBEIN, M.D.

SEX EDUCATION: A GUIDE for PARENTS, TEACHERS and YOUTH LEADERS

By Cyril Bibby, Cloth. Price, $2.50. Pp. 311. Emerson Books, Inc., 251 W. 19th St., New York. 1946.

This is an American edition of a book originally prepared for use in Great Britain. The contents are developed around the concept of the cooperative role of parents, teachers and youth leaders in the sex education of the child.

Sex education is conceived of as a continual process that extends from infancy through adulthood. Building of ideals as the basis for desirable patterns of behavior is stressed. The history and effect of the social setting on sex behavior is traced in some detail.

The home's contribution to sex education is discussed and essential information for parents is provided with a plea for a realistic approach to youthful sex problems. Methods are described for integrating sex education with various phases of the school curriculum. Constructive suggestions for coping with school problems associated with sex are given and the part that various types of youth organizations play in this process is pointed out.

The book is well organized but would be more attractive if printed on better paper and in somewhat larger type. It should prove of practical value to parents, teachers and others.

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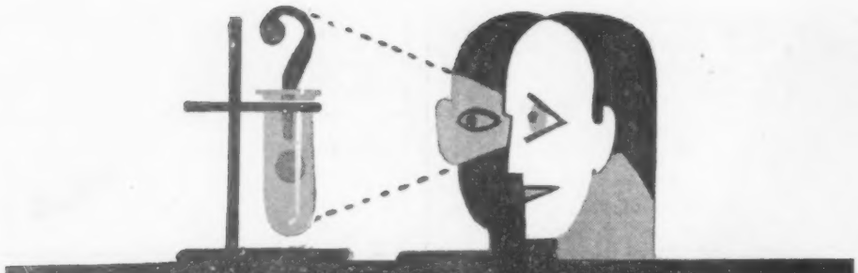

HEALTH in the headlines

BY ELLWOOD DOUGLASS

AUGUST 20, 1897

Fifty years ago on the 20th of this month a 40 year old physician named Ronald Ross sweated at a microscope with a cracked eyepiece in Secunderabad, India. His shoulders ached from long hours at the task; his eyes were red and swollen; his head throbbed; he had in fact an attack of malaria. No benefactor of mankind ever looked less impressive and no search ever seemed more hopeless, for he had been on the same trail for three years and had found precisely nothing.

But that day, in his last five mosquitoes of an unfamiliar variety, he found the malaria parasite and thereby identified the Anopheles mosquito as one of man's worst enemies. That day's work set off a continuing battle of medical sciences that has saved millions of lives and now, with the new weapon of DDT, for the first time shows promise of victory than can one day be complete.

UNWELCOME DISCOVERY

A discovery that probably nobody celebrated has now been reported from a Texas county where the United States Public Health Service is making a survey of intestinal organisms. This "find," announced in *Public Health Reports,* is Salmonella texas, a new species of one of the chief groups of germs that cause food poisoning and bacterial dysentery.

EMOTIONAL HIVES

A disconcerting example of the direct effect which the emotions may have through the body chemistry on the skin was given in the proceedings of the Dermatological Society of a Midwestern city, as recorded in the *Archives of Dermatology and Syphilology.*

A woman of 36, emotionally controlled, consulted her physician because for ten years she had suffered an attack of "hives" whenever she was subjected to heat, physical stress or a situation that made her blush. She first noticed the condition when she climbed to a high diving board and, like many of us, had a spell of "cold feet." She finally dived and on coming out of the water found that she was broken out with hives.

The condition was improved by daily injections to desensitize her to the hormone involved.

WAR DEAFNESS

Within five to twenty years it is expected that about a quarter of a million veterans will have lost their hearing as a result of World War II, the wartime head of an ear department in a Navy hospital said at a recent meeting of the Chicago Society for the Hard of Hearing.

At that hospital, he related, 40 per cent of the patients in his department had had some loss of hearing before they entered the service. He believed that such men should not be accepted in the future selection of military personnel.

Heavy gunfire was the cause in 26 per cent of the patients who suffered loss of hearing in service. Unfortunately, he added, this type of loss is progressive; the impairment will become increasingly severe, and it was on this fact that he based his estimate of the ultimate hearing loss of world war veterans.

INCOMPLETE REST

One of the strenuous aspects of life in the hospital is what has appeared to many patients who have gone in for a complete rest, including the writer, as the barbaric hour at which the day starts. But there is hope. In the last few years, relates the bulletin of Shadyside Hospital in Pittsburgh, a revolution has begun and spread through Wesley Memorial in Chicago, Columbia-Presbyterian Medical Center in New York and several other progressive institutions. There the day begins for nurse and patient an hour later than the traditional "between 5:30 and 7 a.m." And perhaps many patients would join the Shadyside nurse who wrote the bulletin article in hoping that it spreads much, much further.

TOUGHER FOOD

A contributor to the *Journal of the Royal Institute of Health and Hygiene,* published in London, who has compared the state of the teeth with the eating habits in a number of countries, has concluded that a deficiency of tough food is a major factor—he believes the primary factor—in tooth decay. He suggests that a convenient aid for prevention is the daily consumption of some tough bread crust.

HAY FEVER SEASONS

It's no consolation to American hay fever sufferers, going into the worst part of the year, that the Copenhagen

correspondent of the *Journal of the American Medical Association* says the season up there is about over. There, he says, hay fever is at peak in June and July, and falls off sharply by August. Here the peak comes this month, and frequently extends into the first days of September to "ambush" families returning from the "safe" areas to put the children in school. It's a difference in pollens, says the Copenhagen physician.

EYE MAN'S "SNIPERSCOPE"

The blinding little flashlight that the "eye doctor" uses in one phase of his examination may be superseded by infrared rays. They will not "blind" the patient, but will be visible only to the physician by means of a new instrument like the infrared sniperscope that enabled American snipers to "see in the dark." The instrument and its use, developed at the Naval Research Laboratory, were described at a meeting of the American Optical Society, *The Diplomate* reports.